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THE PROGRESSIVE FARMER

AND FARM WOMAN

THE WORLD'S MOST LARGELY CIRCULATED INDEPENDENT FARM WEEKLY

GEORGIA-ALABAMA EDITION

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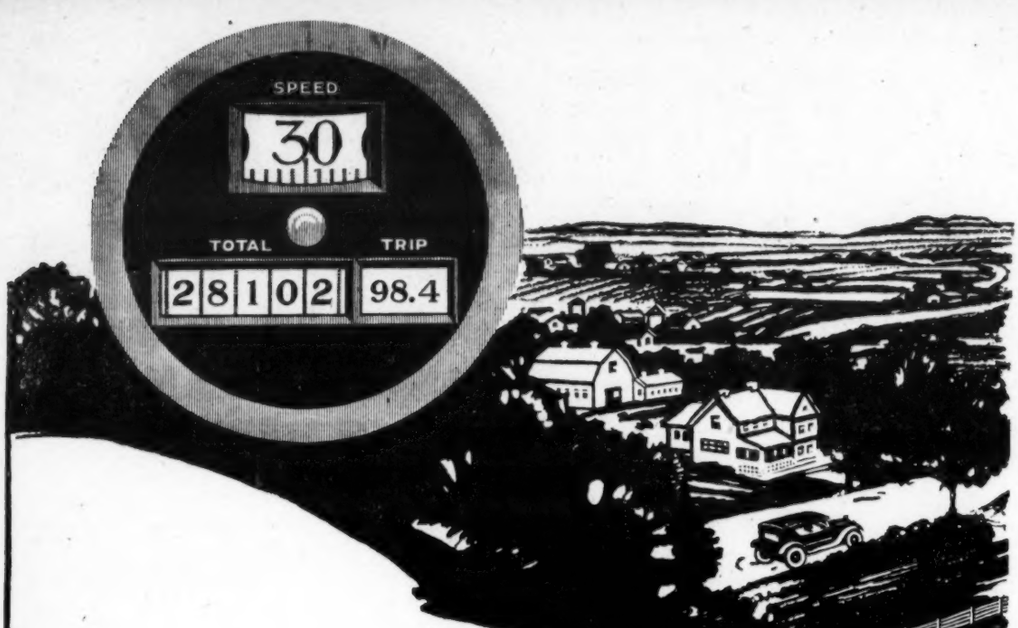
THE SOUTH IS BLESSED WITH GOOD LOOKING WOMEN BUT IS IN DIRE NEED OF MORE PUREBRED CALVES OF THE DAIRY BREEDS

The Life and Services of Prof. W. F. Massey – Page 5



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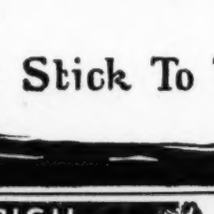

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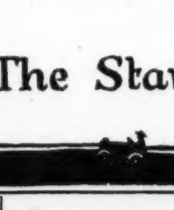

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This Issue and Next

THE LIFE AND SERVICES OF W. F. MASSEY Clarence Poe, his close friend and associate pays personal tribute to "The grand old man of Southern agriculture," Professor W. F. Massey, who died on Friday, March 30. Page 5.

HOME - GROWN FEED BASIS OF MILK PROFITS In the opinion of Dr. Tait Butler the feed problem as it affects milk production can largely be solved by more attention to the home-grown feeds. The quantity of feed to be bought can be reduced to a minimum by following his suggestions. Page 6.

GOOD COWS PAY SORRY ONES DON'T Are you milking five-quart cows about eight months in the year and going without the rest of the time or are you keeping the best cows you can obtain and having plenty of milk all the time? Good cows pay. Page 4.

BEEKEEPING THE YEAR ROUND Beekeepers of the South will get many helpful suggestions from Dr. Reppert's monthly letters on beekeeping. His letters are especially valuable for their timeliness. Page 21.

TUBERCULOSIS OF ANIMALS Your cow may have tuberculosis and still be apparently well. It is possible for this tuberculosis to be transmitted to human beings, particularly children. Protect your family by having your cows tested and destroying those affected. Page 24.

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THE PROGRESSIVE FARMER
AND FARM WOMAN

A Farm and Home Weekly for Georgia, Alabama, and Florida

GEORGIA-ALABAMA EDITION

Published Every Saturday—52 Issues a Year

The Business Farmer's Calendar

Timely Reminders of Things We All Know to Do This Week and Next

Cultivate and Spray Potatoes Early

LET'S keep the Irish potato fields and patches clean and comfortable under a fine earth mulch. Weeders are ideal for making this kind of a blanket and for killing weeds before they are free of their seed coverings. Be the "early bird" for the bugs as well as for the worms. The potato bugs slip up on us sometimes and lay a few million eggs before we know they are out. If the patch is small, the first of these may be destroyed by hand picking, but the best thing to do is to dust or spray with calcium arsenate. Arsenate of lead may be used. Quite often potato blight is very destructive. Bordeaux mixture is specific against blight if used in time. Spray with the 4-4-50 solution with 1 pound of arsenate of lead dissolved in it.

Sorghums Are Good Silage Crops—Plant Them Properly

SORGHUMS—sweet and grain—should be the principal silage crops of the South. Strictly from the forage standpoint, the sweet sorghums are superior to the grain sorghums.

As sorghums are sensitive to cold soils, planting for silage as for other purposes should be delayed until the soil is warm. However, as the sorghums should not be cut for silage until the heads are hard, it is important that they be planted about as early as in planting for grain if the best yields are to be obtained and the highest quality of silage be made. Silage made from immature sorghum is sour and does not keep well, but when it is allowed to mature, tests at the Kansas Experiment Station show that it has less acid than corn silage and keeps just as well. The average acidity of the different kinds of silage as determined by that station was as follows: Corn, 2.03 per cent; sweet sorghum, 1.46 per cent; kafir, 1.43 per cent.

Most of the sorghums for silage are planted in rows either on the surface or in furrows. For surface planting, an ordinary corn planter with a sorghum plate will do the work satisfactorily, the seed being distributed evenly in the row rather than in hills. Plates similar to those used in the surface planter are required for the lister. Sorghum planted with a lister usually starts slowly and does not look well during the early stages of its growth, but owing to the fact that this method of planting enables one to keep the crop clean without injuring the young sorghum plants, it has its advantages in the drouthy sections of the state.

The rate of planting sorghum for silage in rows, while important, does not influence the yield of grain, as most sorghum varieties stool freely when moisture is available and to a certain extent will thicken up a thin stand. In regions of little rainfall, sweet sorghum for silage should be spaced about four inches apart, and in thirty-six to forty-inch rows about four pounds of seed per acre of the Sumac variety will insure such a stand. The grain sorghums should be spaced about eight inches apart when intended for silage. In regions of sufficient rainfall where the sweet sorghums are grown for silage the spacing is much thicker, the plants being put from one to two inches apart. Eight to twelve pounds of seed are used to the acre.

Cultivate Earlier, Faster, and Better—Use Weeders and Harrows

GROUND recently prepared by plowing, harrowing, etc., does not form a crust until enough rain falls to make it run together. When it does begin to harden, it starts at the surface and bakes or crusts *downward* as the soil water passes upward and out into the air. Just as soon as the surface has dried enough to be worked—and this is before it has hardened—is the very best time for it to be cultivated. Why? Because stirring then (1) prevents the formation of a crust, (2) admits air to the soil, (3) traps the moisture as it seeks to escape, and (4) prevents the lower soil from hardening—prevents this *downward* tendency of the hardening process.

Cultivation at this time can be done faster than at any other. Why? Because (1) the soil is in better condition for breaking and crumbling into fine particles (2) it breaks with less resistance, and (3) harrows and weeders will cultivate two, three, and four times as much land in a given time as will the old tools.

At this time cultivation can be done better than at any other time. Why? Because (1) the soil offers less resistance, (2) crumbles better, (3) evaporation of water is checked better and before the loss is great, and (4) weeds are killed before they become large, strong, resistant, and injurious.

Lose no time in using weeders, cultivators and harrows after the crops have been planted, and you can cultivate more crops better, making a larger income from your work.

Cutting and Curing Rye Hay

RYE hay hasn't much reputation for palatability or feed value, yet when cut, cured, and stored properly, it not only is palatable and nutritious but it comes in as the first hay crop, just a little ahead of oats. There are two reasons for the poor reputation of rye as a hay crop. (1) It is not as a rule cut at the right time, and (2) when cut, it is allowed to soak in the dew and scorch in the sun until not much more than woody fiber is left.

Rye intended for hay should be cut just before it blooms or at the time of early blooming. Cut in the forenoon after the dew is off If the sun is warm and the wind blowing, rake into windrows in a few hours and throw into light cocks in the afternoon of the next day. The secret of curing good rye hay lies in curing it as quickly as possible without bleaching; and, curing it in its own shade.

Planting Cantaloupes With Less Labor

IT IS not necessary that holes be dug for cantaloupes or that they be planted in "hills." Holes are often positively detrimental. If big, deep holes are opened and filled with coarse manure, the crop is sure to suffer in either very wet or very dry weather. There is an easier, better, and surer way, and it reduces the labor of preparation to about one-half.

Presuming the land was broken well last fall or winter, the first thing to be done before marking the rows is to disk and harrow—double-disk and double-harrow if necessary for making a good seedbed. Then mark off the rows not less than four nor more than five feet apart. Open a broad, deep furrow for fertilizer and manure. Do not use fresh, lumpy or trashy manure. Mix it well in the furrow. For fertilizer use 600 to 1,000 pounds of 8-4-6 or 8-4-4. Mix this with the soil by running two furrows, using a broad bulltongue or shovel. Next, bed with four furrows, running the first two so as to make a narrow ridge over the center of the row. The next two furrows are broader. This leaves a narrow ridge for smoothing down to nearly level immediately before planting.

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His Influence Lives On

ASTRONOMERS say that so distant are many of the fixed stars from us that if one were extinguished, its light would still linger for years on our earth. And the poet adds:

"So when a great man dies
For years beyond our ken.
The light he leaves behind him lies
Upon the paths of men."

So may we say of Prof. Massey. He is dead but his influence will live on. A hundred, two hundred, five hundred years from now, flowers will bloom about Southern homes that would not have blossomed there but for his influence. Gardens will be cultivated with greater zest and gardening will be a finer art because of the new impetus he has given gardening through his letters, his farm paper articles, and *Massey's Garden Book*. And last but not least, many a field a hundred years from now will still be comely and fertile and unscarred because of the persistence of Prof. Massey's teaching that the earth is the Lord's and each one of us who farms is only a life-tenant of the Almighty's—a life tenant responsible to the Master for the use we make of a soil that must feed all succeeding generations of men.

"Though dead, he yet speaketh."

The South Is "Growing" Into Dairying

NEVER before in the history of the South has there been so general an interest in dairying as at present. This increased interest is due to a variety of facts or conditions. It is by no means entirely due to the presence of the boll weevil over the greater part of the Cotton Belt. With cotton above 20 cents a pound the per acre income from cotton is much greater, even though the weevils reduce the yields, than before the weevils came; but no doubt the boll weevil has caused many to seek an additional source of income and to adopt a system of farming which will tend to increase rather than deplete soil fertility. The boll weevils have made it even more evident than before that the future success of Southern agriculture is dependent on rich soils.

This need for a farming system which would make soil improvement more easy and certain is one of the chief reasons for the present increase of interest in dairying. It is also being learned that dairying is one line of livestock production which fits well with cotton growing. It not only gives more continuous employment to labor, but gives a steady and constant income, thereby reducing the credit needed for the production of a cotton crop.

Moreover, butterfat has suffered less from the general depression in prices of farm products than most other farm products.

But after giving due allowance for all these good reasons for increasing dairy production, we cannot but feel that perhaps the most powerful influence which has stimulated an interest in dairying is the knowledge that the farm families of the South are using not over one-fourth the milk necessary for the proper feeding of our population. No product has ever received more helpful publicity than has come from the recently proved necessity for milk as a human food. The facts which science has recently proved, but which many believed for generations, that milk is necessary for the vigorous healthy growth of children and almost equally necessary for the best health of adults, have been given greater publicity than perhaps any other recently developed facts relating to agriculture.

The encouraging feature of our present dairy development is the large number of small farmers who are selling a little cream, or increasing to some extent the milk produced on the farms. In short, we are now "growing" into a larger dairy interest, instead of "going" into the dairy business as has been too frequently the case in the past.

Beyond question the South has conditions favorable for dairy feed production, which will enable us to make dairying an essential and important part of profitable farming. More feeds, better cows and more dairy knowledge is all that the dairy business needs in the South to put it on a sound and profitable basis.

Good Cows Pay, Sorry Ones Don't

IT TAKES the value of between one and two gallons of milk per day to pay interest on the investment in a cow and to pay the operating expense of her milk-making machinery. Hence if a cow gives less than a gallon of milk per day, she operates at a loss. If she gives more than two gallons per day, some profit is made on her output. Just how much this profit is will depend upon the quality, of course, but primarily upon the quantity of milk produced over and above the cost of production.

Let's see how this works out: Bob Jones has a five-quart cow and gets 8 cents per quart for her milk or 40 cents a day, or just what his cow's daily expenses come to—no profit. Ed Johnson's cow gives six quarts daily, worth 48 cents. His cow's expenses are 40 cents daily, his profit 8 cents per day or $2.40 per month. Charlie Smith's cow gives twelve quarts a day, seven of which are profit. This means a daily clear income for Charlie of 56 cents, or $16.80 per month.

Cow No. 1 only pays her expenses. Cow No. 2 pays expenses and makes a monthly profit of $2.40. Cow No. 3 gives a profit of $16.80 per month. Ed Johnson's cow gives half as much milk as Charlie Smith's cow but Charlie sells his milk for seven times as much profit as Ed gets. Ed would have to keep seven cows to get as much milk as Charlie gets. If one cow is worth $50, then the other is worth $350—and it takes only one and one-half years to make a milk cow out of a calf.

The measure of a cow's value is production above cost and the farmers of the South who do not realize the fallacy in "cows is cows" had best not attempt commercial milk, butter, or cheese production. On the other hand, a herd of cows like Charlie Smith's is one of the most profitable and satisfactory branches of farming a business farmer can take up.

Milk, the Almost Perfect Food

IF THERE is any one fact that clearly and convincingly shows the splendid food value of milk, it is that during the period of most rapid growth in the lives of mammals, milk is the sole food. Milk is so efficient as a food that a baby will ordinarily double its weight in 180 days with no other source of nourishment. A colt or calf will double its weight in sixty days, and a pig in ten to fifteen days, on milk alone.

For the adult, milk alone is not a satisfactory food. It is too dilute to satisfy, too low in iron to prevent anemia, and not sufficiently bulky for the proper elimination of the waste products incident to its digestion. But it is very valuable as a supplement to the ordinary diet or ration of the adult. In preparing cattle for the show-ring, well informed breeders have a high regard for milk as a supplementary feed, for they provide nurse cows for the growing animals, and it is not unusual for a bull larger than the cow he suckles to obtain a part of his feed in the form of milk.

Statistics show that, as a rule, a scarcity of dairy products is accompanied by smallness of stature. The total milk cow population of Japan in 1919 was 40,343, or one cow to every 1,414 people. In this country, we had 23,455,000 dairy cattle and about 110,000,000 people in 1919, or one cow to from four to four and a half people. We average a larger size than the Japanese and while it is probably inaccurate to attribute this difference in stature entirely to our greater milk consumption, the fact remains that Japanese children born to parents residing in the United States are taller and heavier than those of corresponding ages in Japan.

In judging the value of a food, there are about five things to be considered. These are: Its supply of energy; its supply of protein in the right form; suitable mineral matter in sufficient quantities; a sufficiency of three kinds of vitamines; and for all but the young, a certain amount of roughage or indigestible matter. Milk measures up to all but one of these requirements in a very acceptable style. In energy content, a quart of it is approximately equal to a pound of lean steak or eight eggs.

Its protein is contained in a form superior to that of wheat, corn, rice or potatoes. Protein is the nutrient that is responsible for the building of bone and muscle, but experiments have shown that, according to its source, it differs tremendously in the extent to which the animal can use it for that purpose. For instance, according to the Wisconsin Experiment Station, if two animals as near alike as possible, are given 100 pounds respectively of the protein of milk and the protein of ordinary grains, there will be retained sixty-five pounds of the milk protein but less than thirty pounds of the grain protein, in spite of the fact that they are both well digested and absorbed. Grains and potatoes are notoriously poor in their content of chlorine, calcium and sodium, while milk is rich in these minerals and when added to the ration will make good its mineral deficiencies. Milk contains all three of the vitamines: Vitamine A, which is essential to the growth of young animals, and the health of both young and adults; Vitamine B, which is essential to good health, and Vitamine C, a scurvy preventive. Whole milk contains Vitamine A in large amounts, and the other two in smaller but sufficient quantities. In fact, milk is very valuable as a food for humans and a feed for livestock, and here in the South, our people and our livestock don't get enough of it. We need more and better dairy cows, and more and better dairymen.

Cost of Labor Influences Economy of Milking Machines

AT THE Illinois Experiment Station a comparison of mechanical and hand milking showed that considerably less labor is required in caring for cows milked mechanically than is required for cows milked by hand. The average saving was approximately 40 per cent, and this saving in labor appeared to be greater in large herds than in small ones. The cost of maintaining and operating the mechanical milkers offsets to some extent the saving in labor expense. Hence the relative economy of hand and mechanical milking is largely determined by the rate paid for labor. As the labor rate increases, the advantage accrues more and more to mechanical milking.

Because of certain fixed costs in mechanical milking, the expense per cow for power and milkers decreases as the size of the herd increases. It follows that the use of mechanical milkers is more economical in large herds than in small when labor rates and other factors are equal. However, a dairyman who has a small herd and is paying a high price for labor may find milking machines more economical than would a dairyman who has a large herd and is paying a low rate for labor.

WHEN corn is used for silage, as a general thing the largest yield of feed nutrients will be obtained by using the varieties which produce the best yield of grain in the section, and spacing the plants somewhat closer than is customary when a grain crop is desired. On very fertile land with plenty of moisture the plants may be spaced as close as twelve inches apart. As the moisture and fertility of the soil decrease the space between the plants in the row should be widened correspondingly.

THE brood sow that has produced a good litter of spring pigs and nursed them well should be bred for a fall litter. The best gilts from the best old mothers should be selected for future brood sows, but as long as the old sow produces fair litters and feeds them well she should never be turned off for an untried gilt There is probably as great differences in the milking qualities of sows as in cows and a sow that gives her pigs lots of milk feeds them and produces pork most economically. She should be kept as long as she continues to do her work well, which is to produce pigs and feed them well until they are two months old.

NOTHING should prevent the planting of ample feed crops for fattening the spring pigs and other hogs this fall. Corn is seldom cheap enough in the South to make it the most economical feed for hogs when it forms more than a third of the ration. Some corn should be used, but soy beans or peanuts gathered by the hogs should make up at least half to two-thirds the fattening ration. Under favorable conditions, a low price for corn and a high price for hogs, corn may be used as the greater part of the ration and pork produced profitably, but we cannot remember many times in the last thirty years when soy beans or peanuts grown on the farm and harvested by the hogs, with a fourth to a half ration of corn, would not have produced cheaper pork.

The Life and Services of W. F. Massey

A Personal Tribute to "The Grand Old Man of Southern Agriculture"

By CLARENCE POE

"COL. Polk is dead!" "Dr. Knapp is dead!" "Prof. Massey is dead!"

How well I remember the emotions evoked as the news of the death of each of these three great agricultural leaders reached me.

PROF. MASSEY

It was June, 1892, when I heard the news of the death of Col. L. L. Polk. I was a boy of eleven, but my father and nearly all the other farmers roundabout were members of the Farmers' Alliance and looked to it as the deliverer from the hardships and poverty that hung over the whole rural South like a pall. Col. Polk was national President of the Alliance and its greatest leader. Some years before he had founded The Progressive Farmer and had made that paper the trusted spokesman of the farmer. I had no idea then that ten years later I should be his successor on The Progressive Farmer, but I well remember that to us in the little neighborhood where I lived, struggling with mortgages and crop liens and six-cent cotton, the news of Col. Polk's death was as stunning as was news of Stonewall Jackson's death to my father and his Confederate comrades in 1863.

Nineteen years passed after Col. Polk's death and the South was again saddened from Virginia to Texas by news of the passing of another great man who had risen to the leadership of Southern farmers —Dr. Seaman A. Knapp. Dr. Knapp was a philosopher rather than a scientist, a man who loved and understood the plain men on the farm, and because he loved and understood the farmer, developed a new way of reaching and helping him—by face-to-face "demonstration."

Now again in uncounted thousands of farm homes in the South, men and women sorrow because of the passing of a man whom the vast majority of them had never seen but yet had learned to love and trust. As we said last week, not since the death of Dr. Knapp has any man died with so large a following of Southern farmers as Prof. W. F. Massey, whose long and useful life came to an end a few days ago.

I.

Wilbur Fisk Massey was born in Accomac County on the "Eastern Shore" of Virginia, September 30, 1839. He was thus in his eighty-fourth year at the time of his death and had been active in the service of his fellows from the time when, as a boy yet in his teens, he helped survey what was we suppose the first railway line across the wilds of the then territory of Minnesota in 1858. Later he was a Confederate soldier. For twenty years after the war ended, he was engaged in farming and gardening. Since 1885 he had been continuously engaged in educational work, first as teacher of agricultural students in schools and colleges, later as a teacher of adult farmers through farmers' institutes and the farm press. Leaving the North Carolina A. and M. College in 1905 after sixteen years' service, he was for several years editor of the Practical Farmer of Philadelphia. Resigning that work fifteen years ago, he immediately connected himself with The Progressive Farmer and had been regularly on our staff ever since. Although he wrote a few articles each month for other papers, his main work during all these last fifteen years has been for our Progressive Farmer readers.

Not until the minute that paralysis struck him, December 24, 1922, was there any sign of the weakening of Prof. Massey's marked intellectual powers, but four days later, December 28, 1922, he sent me the following note:

"Dear Dr. Poe: I have an idea that I will not write any more for the papers and am writing to let you know. Yours truly,

"W. F. MASSEY."

This note dictated by him but signed by his daughter was the last formal note he ever sent me, and it was in thoroughly characteristic vein. There was about it no whimpering, no fear, no unmanly repining. He, too, was one of Kipling's brave men—

"Who had done his work and held his peace
And had no fear to die."

II.

Perhaps as good a brief biography of Prof. Massey as has ever been written was given in his own words October 11, 1921. He was writing to a Progressive Farmer reader who had written to congratulate him on entering his eighty-third year and had asked Prof. Massey for some reminiscences of his life. Prof. Massey answered (italics ours):—

"I did not start in life as a farmer. I had a scientific education and started out as a civil engineer and before I was twenty-one I had tramped the county west of the Mississippi, running railroad lines from Minnesota to Texas. The Civil War stopped this, and I wore a gray uniform for a time. But I had seen the opening of the prairies and the fearful waste that was entering on the virgin soils. Men threw their manure into streams and ponds to get rid of it and laughed at the idea that the soils of the Mississippi would ever need it. Today the great fertilizer factories in the West attest the waste of former days.

"Seeing all this waste, I determined to devote my life to a close study of the soil and its improvement. From 1865 to 1885 I call my 'undergraduate course' for I was hard at work farming and gardening for awhile under glass. Sometimes I had a run of good returns and then panics and the failure of those I had invested money in helping threw me back. But my idea was to learn so that I might teach and help others.

"In 1885 I was asked to inaugurate an agricultural department in the highly endowed Miller School of Albemarle, Va. Then I felt that I had received my diploma as a farmer, as men seemed to appreciate what I had done in that line. I undertook the work in Virginia, including the improvement of 1,200 acres of hill and dale as a stock farm and to teach practical farming and gardening to the boys. Teaching farming at that time was simply telling the boys one's own experience, for there were no textbooks worth using.

"I must have made some reputation in the few years I spent at the Miller school, for in three years I was invited to take the chair of agriculture in the Virginia Polytechnic Institute at Blacksburg, but declined. The next summer they renewed the offer and again I declined. In the meantime a committee of three men from Raleigh visited the Miller school and stated that they were contemplating starting a farm school in Raleigh. They seemed very much interested in going over the farm and noting what I was doing. Then the next year I received a letter from the Board of Trustees of the North Carolina College of Agriculture and Mechanic Arts asking me to take the chair of botany and horticulture and the office of the horticulturist of the experiment station, as they had made arrangements for the chair of agriculture. Believing that a wider field was opening for me, I accepted at an actual sacrifice in pay.

"Then my work opened up for me. I found there was little interest in soil improvement and I started in to try to arouse the farmers to the value of legumes for soil improvement, especially the familiar cowpea. . . . . I have always tried to keep the moral and spiritual idea before the farmers, dwelling on the responsibility of the farmer as God's tenant for the condition of the soil he cultivates. 'The Earth is the Lord's and the fullness thereof!' Therefore if a farmer runs down his soil and brings to God only the leanness instead of the fullness, he is responsible for his life work. *My morning prayer for forty years has been that I might that day help someone to a better use of God's soil.* When once a man realizes that he is not sole owner of the land but that he is the tenant of Him who owns all, he will be a better farmer and will take a new interest in the improvement and will not wrap his talent in a napkin.

"I have just passed my eighty-second birthday and may never pass another here, but I expect to the last to work for the improvement of the Southern farmer and Southern farms."

III.

Watch any man long enough and some remark of his will finally give you a key to his whole character. The Progressive Farmer gave a supper to Prof. Massey on the day he was eighty years old. Hundreds of Progressive Farmer readers had sent messages for the occasion, and a side table was piled high with the letters, cards, and telegrams. One man after another rose at the table to say how much Prof. Massey's life and service had meant to the farmers of the South, their wives and children; and finally Prof. Massey himself was called on. He rose and with the unassuming frankness and sincerity which had always characterized him, he expressed the same thought that we have italicized in the letter just given. "For forty years," he said, "my prayer each morning has been that God would that day make me of some service to some farmer struggling toward better methods and a better use of God's soil."

Prof. Massey had not prayed for wealth or position, or for a life of ease or luxury. He had prayed only for the power to *serve*. And richly indeed did the Almighty answer his prayer. It is well said that "what we choose is what we are and what we love we yet shall be," and never was this truth better illustrated than in the case of Prof. Massey. He had chosen the task of service, this was what he loved, and in a hundred thousand saddened Southern homes tonight—some of them beautiful estates, many of them humble cottages—there is a realization of the truth that Wilbur Fisk Massey was a true follower of Him who told His followers in ancient Gallilee, "He that is greatest among you, shall be your servant."

A POEM APPROPRIATE TO PROFESSOR MASSEY'S DEATH

ONE of the noblest poems ever written on the occasion of any man's death is the famous "Dedication to the Barrack Room Ballads," written by Rudyard Kipling in memory of his brother-in-law, Wolcott Balestier. If these verses had been written in memory of Professor Massey—"a gentleman unafraid" as he also and always was—they could hardly have been more fitting:—

Beyond the path of the outmost sun, through utter darkness hurled,
Farther than ever comet flared or vagrant star-dust swirled,
Sit such as fought and sailed and ruled and loved and made our world.

They are purged of pride because they died; they know the worth of their bays;
They sit at wine with the Maidens Nine, and the Gods of the Elder Days—
It is their will to serve, or be still as fitteth our Father's praise.

'Tis theirs to sweep through the ringing deep where Azrael's outposts are,
Or buffet a path through the Pit's red wrath when God goes out to war,
Or hang with the reckless Seraphim on the rein of a red-maned star.

They take their mirth in the joy of the earth—they dare not grieve for her pain—
For they know of toil and the end of toil—they know God's Law is plain;
So they whistle the Devil to make them sport who know that sin is vain.

And ofttimes cometh our wise Lord God, master of every trade,
And tells them tales of the Seventh Day—of Edens newly made,
And they rise to their feet as He passes by—gentlemen unafraid.

To these who are cleansed of base Desire, Sorrow and Lust and Shame—
Gods, for they knew the heart of Men—men, for they stooped to Fame—
Borne on the breath that men call Death, my brother's spirit came.

Scarce had he need to cast his pride or slough the dross of earth,
E'en as he trod that day to God, so walked he from his birth—
In simpleness and gentleness and honor and clean mirth.

So, cup to lip in fellowship, they gave him welcome high
And made him place at the banquet board, the Strong Men ranged thereby,
Who had done his work and held his peace and had no fear to die.

Beyond the loom of the last lone star through open darkness hurled,
Farther than rebel comet dared or hiving star-swarm swirled,
Sits he with such as praise our God for that they served His world.

—Rudyard Kipling.

Favorite Bible Verses

I AM the door: by me, if any man enter in, he shall be saved, and shall go in and out, and find pasture.—John 10:9.

Boast not thyself of tomorrow: for thou knowest not what a day may bring forth.—Proverbs 27:1.

A Thought for the Week

"THAT boy Johnnie," remarked Farmer Brown, "would be a great boy if he was not all the time a-projecting when he ought to be a-working."

"Projecting?" we asked. "What do you mean?"

"Oh, he is always studying up something and making all sorts of fool experiments. Why, first I knew he had one cow dry and another one nearly bursting with milk; he said he was trying the effect of timothy hay compared with a balanced ration. Then I wondered what kept him so long down at the sheep barn, and when I investigated I found that he was weighing the hay and grain that he fed to a pen of lambs. He said he wanted to know what it cost to make a pound of mutton. Blamed if he did not find out, too, and proved to me that I had better either buy oats or knock the dumb lambs in the head. Oh, he is a projecter, all right, but he worries me half crazy sometimes when I need him with the field work."

Let that boy alone. Better encourage his "projecting" and direct it by sending him up to study the work of the experiment station. That boy's thought will some day be worth more to that farm than the muscle of several strong men.—The late Joseph E. Wing.

Home-grown Feed Basis of Milk Profits

By TAIT BUTLER

Good Cheap Roughages the Basis of Economical Dairy Production

THE basis of successful dairying in the South, as elsewhere, must be home-grown feeds. The greatest single cost item in dairy production is feed and, therefore, the lower the cost of feed the greater the opportunity for profit. It is well known that the dairyman will always buy more or less concentrates or grains; but as he is able to replace high priced purchased concentrates with home-grown feeds, he reduces the cost of milk production and increases his profits. The dairyman must plan a cropping system which under his conditions will produce the best dairy feeds in largest quantity. Unless he can produce feeds economically he will labor under the greatest posssible handicap.

TAIT BUTLER

The cropping system must first provide for an abundance of the best roughages. Since these are the cheapest feeds he must produce the best possible roughages and use them as largely as practicable. Whenever it is practicable to reduce the grain feed by increasing the consumption of home-grown roughage he should do so, because he will thereby decrease the cost of production and increase the net earnings of his cows.

Roughages

THERE are three classes of roughages which the dairyman should use to the limit, pasturage, silage and legume hays.

Under general conditions in the South the cheapest of these roughages will be green pasturage. When it is not practicable for the dairyman to provide good pastures he will be working under a handicap, but whenever an abundance of good green pasturage is not available he must have silage. It may not be practicable to have sufficiently good pastures, even in summer time, to supply the cows all the green feed they should have and when this is true, no matter what the cause may be, silage should make up the deficiency.

Good pastures can be made and maintained in the South, but they will not always come naturally or without considerable effort on the part of the dairyman. It will pay to put the effort into pastures necessary to make good ones. There is no escape from this, and the dairyman who does not give the necessary attention to the making of good pastures is simply neglecting a most important factor which will largely determine his success or failure.

Silage

THE dairyman milking eight to ten cows, with the other animals which will consume some silage economically, will find silage his cheapest roughage when pasturage is not available. It is possible that the small dairyman who has good pastures and grows an abundance of legume hay may find the expense, in both building a silo and providing the machinery necessary to fill it, too great; but a dairyman with even ten cows can well afford to build a silo if he can hire the machinery necessary to fill it.

The dairyman with twenty or more cows, simply cannot afford to be without a silo, unless he is rich or is keeping cows for fun or his health. Unless pastures are especially good the silo will render valuable service in summer, during those periods of short grazing, due to dry weather or other causes, which are certain to come.

For winter feeding nothing but roots will take the place of silage and it has been clearly proved that in the South especially, silage furnishes a much more economical feed than any root crop.

The dairyman who for any reason has not an abundance of good silage for winter feeding and for helping out the pastures when from any cause these become short, is working under very great disadvantages and placing an unfair handicap on his chances for success.

In the South, the sorghums make more and cheaper silage than corn or any other crop yet found. For Southeast and Middle South the sweet sorghums are best, but for the Southwest the grain sorghums as well as the sweet sorghums are preferable to corn, in that they produce more feed value per acre, or feed at a lower cost.

Legume Hays

THE dairymen of the South have not yet learned to appreciate legume hays at their full value for dairy production. When purchased they may cost too much, but when home grown they are the cheapest source of protein up to the capacity of the cows to use them. They cost too much when purchased because of the heavy freight rates and handling or commission charges; but when grown on the farm they are cheaper than wheat bran, so largely purchased, and have an additional value in being soil improving crops. It is pretty generally recognized that the growing of legumes is the most economical means of increasing soil fertility and it is also equally well recognized by intelligent dairymen that legumes are among the best and most economical dairy feeds.

To produce dairy feeds economically the dairyman must have a rich soil and since the growing of legumes is the best means of enriching the soil and at the same time these legumes are the best dairy feeds it must follow that the successful dairyman will not only grow but use large quantities of legumes.

Five pounds of any good legume hay will be found equal to four pounds of wheat bran. Legumes afford about the only means which the dairyman has for reducing the quantity of expensive concentrates which must be fed to dairy cows. No section has any advantage over the South in the economical production of legumes. Alfalfa is probably the best. It can be produced economically to a larger extent than at present, but where alfalfa is not the best we have lespedeza, soy beans, cowpeas, velvet beans, peanuts and many of the true clovers.

If Southern dairymen once recognize the importance of good pastures and an abundance of silage and legume hays in economical dairy production, our dairy industry will be on a sound and economical basis, for all these may be produced as economically in the South as anywhere else in America.

Feeding the Southern Dairy Cow

IN ANY feeding problem the particular animal being fed must have first thought. Animals vary in their likes and dislikes and in their ability to use feeds. The feeding of the dairy cow is peculiarly an individual problem, each cow requiring individual attention. But the dairy cow is fed for production or for profit. Therefore, the cost of producing a gallon of milk or a pound of milk fat must never be lost sight of. In selling our feeding stuffs on the market we seek the best market or the highest prices for them. In a similar manner when we sell our feeds to a dairy cow, exchange them for the milk produced by the cow, we should, with just as great interest and care, seek the largest amount of milk for the feeds consumed, or strive to obtain the highest price for those feeds.

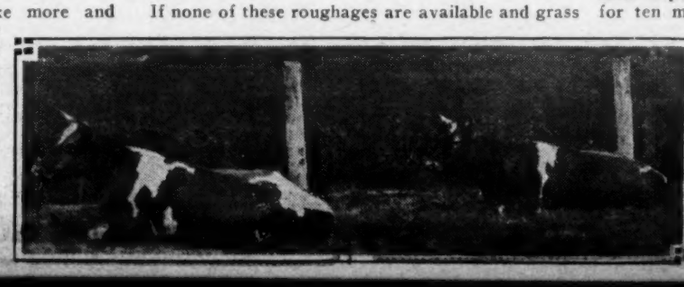
These facts have the same force and bearing whether the single family cow is being fed or a large herd for the production of market milk, cream or butter.

Feeds Available

THE first question to receive attention is what feeds are available; that is, what feeds have been produced on the farm and what ones must be bought? The dairy farmer who makes the largest profit is the one who produces on his farm the largest part of the feeds used. But concentrates or grains are often purchased and when this is necessary the question at once arises, what feeds are required to balance those already on hand and which of these are the best values at the prices which must be paid?

Before the grains or concentrates necessary can be selected with intelligence and economy the roughages must be known. These roughages should be grass or silage and some legume hay. If there is no legume hay the concentrates must be different. On the other hand if there is little or no grass and no silage, legume hay is necessary to the most economical feeding. Of course, this legume hay should be grown on the farm. It costs too much to ship or handle hay for any dairyman to find it profitable to buy it.

If none of these roughages are available and grass hay, corn stover, cottonseed hulls and other low grade roughages must be used, the concentrates necessary will be different in kind and the quantity must be larger.



A Cheaper Carbohydrate Needed

THE greatest feed problem of the South is the production of a cheap carbohydrate, or a feed rich in starch and sugar. With a large variety of legumes and cottonseed meal the problem of protein feeds is easily managed, but so long as corn, the great carbohydrate feed of the North, is only produced at the average rate of eighteen to twenty bushels to the acre and, hence, at so high a cost, the problem of supplying suitable carbohydrates at a reasonable cost will be troublesome. At present silage may be used to reduce the carbohydrate concentrates required, but even that does not solve the problem, because some concentrate rich in carbohydrates is necessary.

In the Southeast and Middle South corn is probably the cheapest and best available carbohydrate, but it can never be cheap until we grow more than our present average yields per acre. In the Southwest the grain sorghums must largely take the place of corn, for they are nearly as good pound for pound and make larger average yields per acre.

To these may be added molasses and rice products, which when cheap enough may supply the larger part of the carbohydrate concentrates required. The Southern dairymen must develop a Southern system of feeding with Southern grown feeds, or continue to suffer a handicap through heavy freight rates and other handling charges, which will often more than balance any advantages they now possess through cheaper lands and a milder climate with a longer growing season.

We must produce a suitable concentrate rich in carbohydrates at less cost and substitute as far as possible legume hays for wheat bran, oats and rich protein concentrates or grains.

Combining Feeds

ANY one who will provide himself with a book or bulletin giving the digestible nutrients in feeds can with a little study soon learn to balance his rations near enough for all practical purposes. Even those who will not do that, may still balance their rations in a fairly satisfactory manner by using, say two feeds rich in corbohydrates and two rich in protein. For instance, if one is feeding corn or sorghum silage and cottonseed meal he can make an excellent ration by adding legume hay and corn and cob meal, or ground sorghum grains. If with silage he is feeding grass hay, corn stover, or cottonseed hulls, then he will require two concentrates, one rich in protein and another at least with a fair content of protein.

If on the other hand only legume hay is used for roughage he must have at least one concentrate high in carbohydrates, like corn or the grain sorghums. Some will continue to use cottonseed hulls as the only roughage and cottonseed meal as the chief or only concentrate. Cows will exist and produce some milk on such a ration, but it lacks variety and is not efficient, hence is not economical.

Quantity of Feed

IT SEEMS like a simple matter to determine the quantity of feed, to be given, but there is no single question more frequently asked than, "How much feed should be given?" There is a simple rule for feeding roughage which any one can follow. As already stated, the best roughages are green grass, silage and legume hays, grown on the farm. The rule for feeding these is to give the dairy cow all she will eat.

For feeding concentrates or grains there are a number of rules, but the feeder by rule is apt to find many cases in which his rules do not work. As a general rule enough feed cannot be given the good dairy cow to prevent her losing flesh or weight when first fresh. The dry cow or one giving little milk may require some grain to keep her in the condition desired. A cow that will not give enough milk to pay for six or eight pounds of concentrates for ten months of the year is probably not good enough cow to keep. The dairy cow should be fed no more grain than she will pay for. Or in other words, the grain feed may be slowly increased to the full capacity of the cow to digest it so long as the increased feed gives an increased profit.

The best general rule for the person who does not test the milk for butterfat is to give one pound of grain for from three to four pounds of milk produced. The richer the milk the more feed will be required.

Silo Facts Every Farmer Should Know

THERE are certain things that every one who is to build a silo should know when his silo plans are being made. He should know how much silage an average animal will consume in a day, a month and a year. He must know this in order to determine what the capacity of the silo should be before he makes out his bill of materials. The following table gives these facts for silos ranging from 20 to 40 feet high and from 10 to 22 feet in diameter. Thus a silo 26 feet deep (left column) and 15 feet in diameter (under inside diameter) will hold 85 tons. If the land the silage crop is grown on produces 8.5 tons of green corn or green soy beans per acre, then 10 acres of such land will fill the silo.

Twenty cows consuming 30 pounds of silage per day would eat 600 pounds silage daily, which would limit the diameter of your silo to 11 feet, taking for granted you were feeding small amounts of silage to your work stock and sheep. These cows would eat 81 tons of silage in 9 months thus making the height desired about 38 feet, allowing three feet for the silage to settle after the silo is filled, which gives about 35 feet of silage.

APPROXIMATE CAPACITY OF CYLINDRICAL SILOS IN TONS OF CORN SILAGE

	Inside diameter in feet							
Depth of silage in feet	10	12	14	15	16	18	20	22
20	26	38	51	59	67	85	105	127
21	28	40	55	63	72	91	112	135
22	30	43	59	67	77	97	120	145
23	32	46	62	72	82	103	128	154
24	34	49	67	76	86	110	135	164
25	36	52	71	81	91	116	143	173
26	38	55	75	85	97	123	152	184
27	40	58	79	90	102	130	160	194
28	42	61	83	95	109	137	169	206
29	44	64	87	100	114	144	178	216
30	47	67	91	105	119	151	187	226
31	49	70	96	110	125	158	196	237
32	51	74	100	115	131	166	205	248
34	56	80	109	126	143	181	224	271
36	61	87	118	136	155	196	243	293
40	70	101	138	160	180	228	282	340

MINIMUM AMOUNT OF SILAGE TO BE FED DAILY FROM SILOS OF VARIOUS DIAMETERS

Diameter of silo	Minimum amount of silage pounds	Diameter of silo	Minimum amount of silage pounds
10 feet	520	18 feet	1,680
11 feet	625	20 feet	2,075
12 feet	745	22 feet	2,510
14 feet	1,015	24 feet	2,985
16 feet	1,325	26 feet	3,505

Silage must be fed fast enough to keep it from spoiling. This means that a certain quantity of silage must be taken daily from a silo of a given diameter in order to remove enough each day to prevent the top from becoming too sour. Thus (see table) from a silo 14 feet in diameter 1,015 pounds of silage must be removed daily in order that the surface may not become damaged by exposure between feeding times.

Tar Paper on Silage Called Worth Trying

"WORTH trying" is the way the livestock men at the New York State Agricultural College at Ithaca characterize the suggestion of covering the top of silage with tarred roofing material to prevent spoilage.

The information on how and why to do it comes from Fulton County, Illinois, as follows:

"Cut strips of roofing as near the size of the silo as possible and allow the edges to lap two to three inches. One thickness is sufficient and the heat from the silage will cement the laps together.

"This should be put on the day following the completion of filling the silo, after the silage has been well tramped and if possible the top surface well soaked with water. As the steam rises from the heating silage, the tarred paper causes the water to condense and fall back upon the surface and in this way excludes the air and also keeps the top layer moist instead of being dried out as it is when no covering is used."—Extension Service, Ithaca, N. Y.

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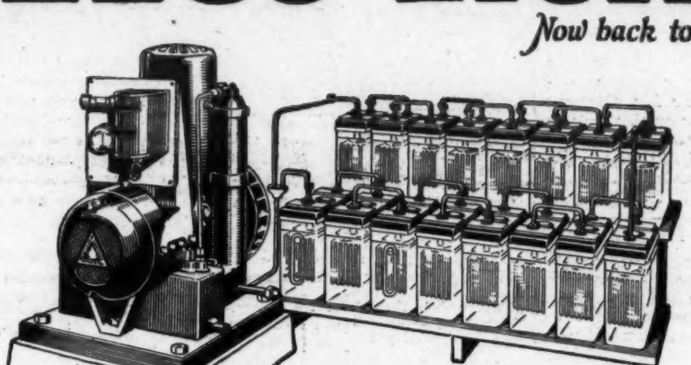

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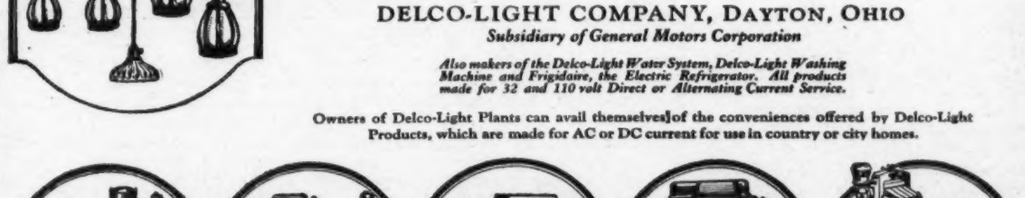

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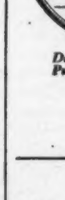

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A Cow, Sow and Hen Program

HOW THE AVERAGE FARMER CAN GET IT

Turner County Adopts This Program for Prosperity

By PAUL W. CHAPMAN

Editor's Note.—We have heard a lot about the Turner County program. In this article Mr. Chapman tells what one on the outside finds on looking in. Turner County is setting an example that might well be emulated by a few hundreds of other counties in the U. S. A.

PROBABLY every farmer in Georgia has heard, at least in a general way, of the Turner County Permanent Prosperity Program.

This farming program, which was definitely formulated in Turner County, Georgia, less than a year ago, has been endorsed by the bankers, the merchants and the farmers of the state. Pages of news items concerning the program have filled the papers of Georgia and other states. The Georgia Association has endorsed it and through the aid of their president, George T. Betts, they have presented the program to thousands of farmers in all parts of the state. The prosperity of Turner County has attracted national attention and not long ago a full page of The Public Ledger, one of the largest papers in Philadelphia, was devoted to telling the story of how prosperity had come to that section surrounding the little town of Ashburn.

Since this movement has attracted so much attention there are two questions concerning it that naturally arise in the mind of any farmer who may want to put it into practice. The first is, what is this Turner County program? And the second is, how is it working at home, and what do the home folks think of it?

Turner County Gives the Answer

THESE are practical questions and I went to Turner County to get the answer to them.

The first thing that I learned was that there was a very definite program, which had been put in writing. It is a livestock program of farming that includes dairy cattle, hogs, and chickens. Bulletins and posters setting forth the details of the plan have been distributed over the entire county and everyone is familiar with the plan. From one of the posters I copied the following key to the program:

TURNER COUNTY'S PROSPERITY PROGRAM

One-horse Farm Unit

Three to six good producing milk cows.
Two good brood sows.
Twenty to forty hens.
Ten acres in corn, velvet beans, and peanuts.
Five acres in oats followed by peas or other hay.
Four acres in wheat followed with Spanish peanuts.
Five acres in Spanish peanuts, or watermelons, or divided with tobacco.
Three acres in sweet potatoes and cane.
Twelve acres in permanent pasture sowed to carpet grass, Dallis grass, and lespedeza.
Five acres in cotton.

From this key a farming program for any size place can be worked out. The interesting thing about this very definite plan is that it is applicable, with but slight changes, to any part of the state. I forgot to say that in every case they want to produce only purebred stock.

This program has the endorsement of every organization in Turner County, and every person in the county is an active booster for the pig, the chicken, and the cow. They have held almost hundreds of meetings to perfect this program and get it operating successfully, and one of the things they did after deciding upon the program was to set a few stakes in the road to show them just how fast they were moving in the desired direction. At the end of the present year this is the statement of what they hope to have accomplished:

TURNER COUNTY'S OBJECTIVE FOR YEAR 1923

Increase in cream production to 100,000 pounds a month.
Increase in hog production to 15 cars a month.
Increase in poultry production to two cars a month.
One hundred Calf Club members; 250 Pig Club members; 150 in Canning and Garden Club; 200 in Poultry Club; 800 Farm Bureau members.
A permanent pasture on every farm.
Twenty-five per cent increase in acreage production.
Good schools throughout the county.
Two hundred new farm families placed in county during 1923.

A careful study of conditions at present seem to indicate that these figures will be easily reached. For example in regard to cream production. At the time that these figures were decided upon the monthly production of the creamery was around 40,000 pounds a month. Last month the Ashburn creamery turned out 73,000 pounds of butter. Since January 1, 18 carloads of hogs have been sold. A coöperative hog sale is held on the first Tuesday of every month.

SOUTHERN FARMS NEED MORE GOOD SIRES

The farmers of the county own their own stock pens at Ashburn. They also maintain a warehouse and regular business establishment in connection with the office of the county agent, H. B. Ralls. Last year this office bought and sold products for the farmers of Turner County to the value of $85,000, and this year Mr. Ralls says that their business will exceed $100,000.

This gives a rather definite idea of the farm program of the county and the goal that they hope to reach by the end of 1923, as well as a fair idea of the prospects for attaining these ambitions. Now to the second question, how does it work in the country on the farm, and what do the farmers of the county think of the plans? Is it making them money?

System Is Working

TO GET some information on these points I rode over the county with Ivy W. Duggan, the teacher of vocational agriculture in the Ashburn high school, and we visited dozens of farmers. My conclusion is that it is working fine; that the farmers are pleased with their prospects; that they are happy in their work; and what is more important that they are making some money.

Among the men we saw was Garnett Durham who is milking 15 cows, and has several hundred chickens, and a number of brood sows.

"The cream checks from these cows," said Mr. Durham, "have paid the operating expenses of this farm since the first of the year and we are operating 22 plows. My last check, for a 15-day period, was $79. We have not bought a single pound of feed. I put straw in the barn and when this is saturated with manure I sprinkle acid phosphate over it and put it on the fields. In this way I get a complete fertilizer, which to my mind, is one of the great indirect benefits that goes along with a livestock program.

"I was one of the last farmers in the county to come over to this program. I had tried tobacco when that was recommended, I had tried beef cattle and other things that had not worked out so well, so when this program came along I was slow to take hold of it, but I am more than satisfied with it.

"One of the important aspects of it from my point of view is the interest of my two boys. One of the boys is 16 and the other one 14. I give them one-fourth of the cream checks to do the feeding and the milking, and as a result they are just as interested in the success of the cows as I am, and I can absolutely depend on them."

This remark about the boys was one of the interesting things that I learned about the whole program. The boys are taking to it like ducks to water. Mr. West, another man we saw, said that his boy, who is in the agricultural class in the high school at Ashburn is going to school every day and making $20 a month out of the cows and chickens.

Of all the poultry plants that I saw, and there were a number of them, I think that the most interesting was that belonging to R. L. Betts. He has 200 Reds and 200 White Leghorn hens. They are purebred and of very fine strains. Consequently he has been selling his eggs for hatching, or rather has been hatching them and selling baby chicks. He said that in this phase of the business he had spent $200 since the first of the year and that he had sold almost $1,000 worth of chicks.

He has a brooder house with a heater that he rigged up himself in which he can care for 4,000 chicks at one time.

As we went in he was feeding his hens and after we had exchanged greetings he said: "I guess that I should have more litter here for the hens to scratch in, but I'm just too lazy. Success has come too easy! I have 200 hens here and I get about 175 eggs a day."

For the man or woman who expects to go into the business, however, it is well not to be deluded by what Mr. Betts had to say. His success, like all others in the field of livestock production came only after untiring efforts and some mistakes.

Such examples of the experiences of Turner County farmers could be multiplied without end but the two that I have given are typical.

Coöperation Is Practiced

IN CARRYING out this program, coöperation is one of the important features. Most of the chicks hatched in the county are hatched in a 10,000 capacity incubator that is coöperatively owned by the county poultry association. This incubator, which is kept in the office building of the county farm bureau, has been kept going constantly since Christmas. Up to the present time more than 28,000 chicks have been hatched.

In the beginning it was doubtful whether or not enough eggs could be found in the county for running the incubator to capacity, especially since nothing but purebred eggs were allowed in the machine. But only once have any eggs been imported into the county and that was for the first hatch. So many applications have come in for space in the incubator that every individual is limited to 500 eggs a week.

One of the men was "plum disgusted" to be held down to such a small number and said that in another year he would put in a mammoth incubator of his own. The hatches have been fine, and the indications are that another incubator will be added next year.

Evidences of Progress

SEVERAL new dairy barns are in the process of construction, and a large number have been remodeled.

Hogs are seen everywhere grazing in the oat fields. Many sows have already farrowed and are followed by thrifty litters of pigs.

Just at this time the roosters are being culled from the chicks that were hatched early and these are being sold through Mr. Bishop of the Ashburn Creamery as dressed poultry. At present these fryers are bringing 40 cents a pound. The poultrymen have learned that they can buy their chicks, feed them for eight weeks, sell the roosters, and then have the pullets left as clear profit.

This livestock program in Turner County is going over big. But it is well organized and everybody is working at the job. You can't meet anybody in that town who is not talking cows, hogs, and chickens. The business men, the bankers, the newspaper editor, and the preachers talk livestock. One of the merchants told me that he had sold 28 brooders, and about 200 cream separators, and such things are bound to create interest. The bankers told me that they were making many livestock loans and that they were being taken care of promptly through the cream checks.

Air of Prosperity

THERE is an air of prosperity in Turner County. The train that I left town on carried away a truck load of butter, another truck load of cream cans, and a dozen barrels of dressed poultry. And this is a daily occurrence.

Every day some delegation visits the county to learn more about its program. The day I was there I met a group of men from Lee County, Georgia, and another from Florida. Turner County is doing things and other people are finding it out.

Any county that will put the effort into the program can do as well. And so can any individual who is looking for a good paying, interesting job.

The Turner County Program, however, was not intended for the fellow who is looking forward to "laying by" time.

Garden and Orchard

By S. L. Newman

What to Do in the Garden

MUSTARD is of a very easy culture. Sow one-half ounce seed to 100 feet of drill and thin to three to six inches in rows 18 to 24 inches apart. Mustard will produce well on any good garden soil, but responds luxuriantly to heavy manuring and fertilizing. The Giant Southern Curled and Ostrich Plume are the best varieties.

MR. NEWMAN

* * *

Onion sets may be put out now, though it is too late to sow the seed south of the mountains. The seed should be sowed in October or late September. Onions are gross feeders and demand constant and thorough cultivation. When four inches high topdress with 300 to 400 pounds of 8-4-4 fertilizer, or better still, with 8-4-8 fertilizer per acre. Three or four weeks later topdress with 200 to 400 pounds of nitrate of soda.

* * *

Parsley may be started now to advantage. Sow one-fourth ounce to 50 feet of row. Parsley is slow to germinate and the seed should be firmly pressed down. About the surest way to start this plant is to sow in beds in rows 6 to 10 inches apart and cover the soil with boards or bags until they begin to germinate. When the roots are one-fourth inch thick, take up and transplant after removing the greater part of the top and after shortening the root to two inches. Set 10 to 15 inches in 18 to 24-inch rows.

* * *

Parsnips are looked upon as being hard to grow on account of the difficulty in getting the seed to come up. This difficulty may be very largely avoided by early sowing. It is preferable to sow in March or early April and even then the seed should be rolled or pressed with the foot or by running a wheelbarrow over them before covering. For good roots next fall, winter, and early spring, sow now. Sow one ounce to 100 feet of row, and thin to four or five inches in the row, with rows 18 to 24 inches apart. To make good roots, parsnips require a deep, open, and very fertile soil. The roots are improved by freezing temperatures and keep best by being left in the ground where they grew.

* * *

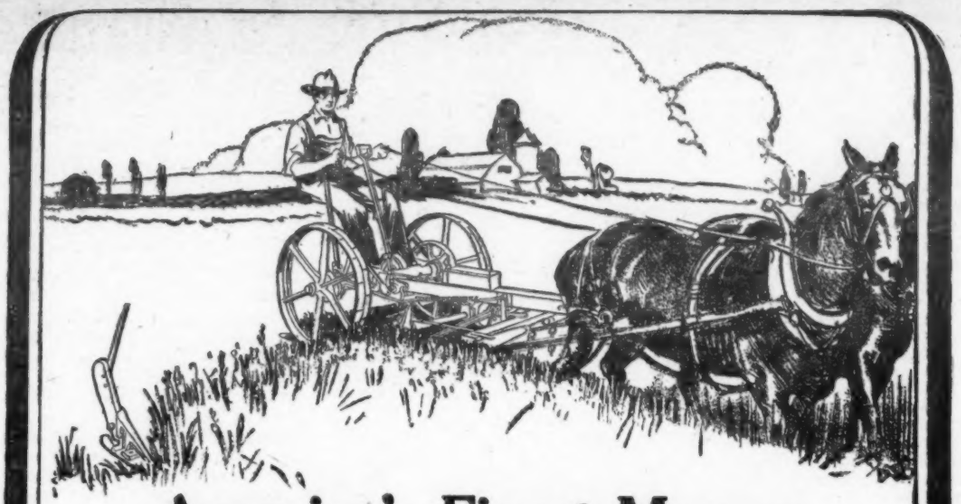
English peas over the greater part of The Progressive Farmer territory should be coming into blossom by early April. Plant Alaska, Thomas Laxton, and Ameer for first crop and Telephone, Everbearing, and Champion of England for later. The Melting Sugar has edible pods and is the best of its class. If restricted to three varieties, early, medium, and late, sow Alaska, Ameer, and Telephone.

* * *

Radishes are of such easy culture and the more desirable home garden varieties come off so quickly that this, the lowest vegetable in nutritive value, needs but little comment. The extra early globe varieties come into use in a little more than 20 days after the seed are sowed. They respond to liberal fertilization and good soil. White-tipped Scarlet Globe, Scarlet Globe, and Scarlet Turnip are good round varieties. Many are partial to the olive-shaped French Breakfast. The Cincinnati Long Scarlet and the White Vienna are good long-rooted varieties.

* * *

Spinach, the best of all the salad plants, may yet be sowed, though this is one of our delicious and wholesome vegetables that we may have all through the winter. Sow one to two ounces to 100 feet, in rows 12 to 24 inches wide. Thin to four to six inches. Fertilize heavily and when two inches high, cultivate in a topdressing of nitrate of soda.



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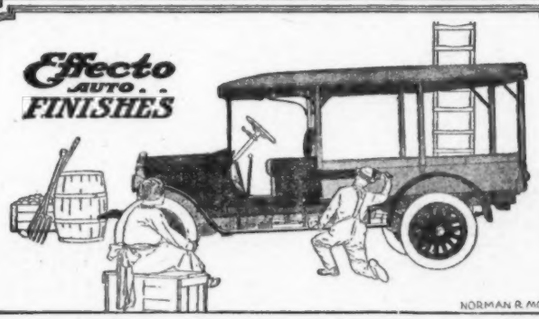

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Boll Weevil Control Measures

IV.—Various Methods of Poisoning

By C. A. WHITTLE

THE immediately preceding article of this series treated of poisoning the boll weevil with calcium arsenate in the dust form. This article treats of other methods of applying poison.

Three claims are made by manufacturers who put out calcium arsenate in a liquid for poisoning: (1) It is less expensive than dusting. (2) It can be put on during the regular work hours of the day. (3) Rain will not readily wash it off.

For Young Cotton

EXPERIMENTS have been conducted showing the relative cost and effectiveness of dust and liquid poisons. On young cotton, before the squaring time, the liquid poison has proved as effective as dust, but on fruiting cotton, dust has proved the more effective.

In view of the fact that liquid poisons and dust have proved about equally effective for early poisoning, what factors should influence the farmer in making a choice?

Which Is the Cheaper?

IT HAS been demonstrated by J. H. DeLoach, former director of the Georgia Experiment Station, that by the use of a dust bag, one pound of calcium arsenate per acre will successfully kill boll weevils on small cotton before squares form. At the present price of calcium arsenate, this would mean a cost of 18 to 20 cents per acre. Suppose, however, two pounds per acre is applied. This will be 36 to 40 cents per acre for the poison.

How would this compare in cost with one to two gallons of poisoned molasses or other mixture? Some manufacturers claim that a gallon of their poison will treat an acre, and the price per gallon varies with the mixture from 20 cents to 75 cents a gallon.

Which will entail the greatest labor cost? Shaking a bag over the tops of the cotton plants will require less time than mopping the cotton. Dusting young cotton can be done at any time during the day. Therefore, the saving in labor in poisoning small cotton is on the side of dusting.

Will Rain Render the Dust Less Effective on Young Cotton?

DUST is shaken on the cotton so that it will settle down into the top bud of the plant, the object of early poisoning being to put calcium arsenate in the top bud. With dust down in the top bud, rains, of course, do not easily wash it off.

Another factor in making a choice between dust and liquid poisons for young cotton before squares form, is involved in this question: "Will poison sweets attract and kill useful insects?"

The writer has asked several farmers who have used poisoned molasses as to whether or not they saw signs of bees being killed by it. They have said that the poisoned molasses has killed bees. The number of honey bees, bumble bees, wasps, and other useful insects that are attracted by poisoned molasses will depend on whether or not there are blooming plants and flowering trees in the region that attract them more than the sweets on the cotton. The poisoned sweets are also more likely to attract insects before cotton forms blooms than after.

Insects are of great importance in cross-fertilizing many crops and it has been shown that they influence cotton yields. Therefore, it would be a disadvantage to use poisoned sweets if a farmer finds that they are attracting and killing useful insects.

For Fruiting Cotton

AN APPLICATION of liquid poison to fruiting cotton, as claimed by the manufacturers of such materials, is cheaper than dusting. It is also true that liquid poisons can be put on during regular work hours instead of late in the evening and early in the morning, as required for dusting. It is also true that poison held by binders adhere more tenaciously to the cotton plant than the dust.

But are these advantages offset by any disadvantages? If liquid poisons were equally as effective as dusting on fruiting cotton, there would be no further argument, liquid poisons would be entitled to right of way.

What have comparative tests shown? Have the experiment stations and entomologists of the states and Federal Government tried liquid poisons alongside of dust poison? They have, and the results they have obtained have led all of them to advocate dusting in preference to liquid poisons.

Some of these tests have not been carried on sufficiently long to be conclusive. There is, in fact, need of more experiments to determine the exact value of liquid poisons under the varying conditions of the Cotton Belt. This will be forthcoming, we have no doubt.

From Highest Authority

THE boll weevil control situation was discussed and analyzed at the Memphis meeting of Southern Agricultural Workers in February of this year as it had never before been analyzed. Participating in the meeting was practically every person who has attacked the problem from any angle. The statement issued at that meeting is, therefore, the most authoritative ever put forth.

On the question of what kind of poisoning to recommend, the association said: "Of the various methods of control involving the use of poison, your committee recommends the calcium arsenate dusting method and the Florida method. There are no other methods having as yet the sanction of adequate scientific proof."

The association advised more extended and extensive experimenting with liquid poisons, and it advised the use of the Florida method only in Florida, or in areas having similar climatic conditions to Florida, until experiments are concluded in other parts of the Cotton Belt to determine how widely it is adapted.

If liquid poison is cheaper, it is because it does not carry as much arsenic as the dust. A cotton plant covered with arsenate is likely to poison the weevil more effectively than when partly covered with poison or totally covered with diluted arsenic. This seems to be the logic of the difference in effectiveness of dusted cotton and cotton mopped or sprayed with liquid poison. It is only the arsenic that kills weevils, and when a plant is thoroughly poisoned nothing less will be so good and nothing is more necessary.

The article immediately preceding told how dust poison was thoroughly effective under extremely rainy conditions. The tendency of dust poison to wash off is therefore not as much against it as might be thought.

Though a liquid poison may adhere to a plant longer than dust, this does not mean that its effectiveness as a poison is proportionately longer than dust. Any poison, to be highly efficient, must be put on with a certain frequency in order to keep new squares poisoned. A danger point of weevil attack is new squares.

Attracting Boll Weevils

CLAIMS have been put forth that molasses will attract weevils. Very conclusive tests, as previously stated, have shown that they do not. The most conclusive tests on this point were made by W. E. Hinds, state entomologist of Alabama, several years ago. Checkered squares were laid off in a cotton patch. On some molasses were put. On others no molasses were used. Boll weevils were then marked, turned loose and followed. Under field conditions, unrestrained by cages or other devices, the weevils, of course, acted in a natural way.

On the areas having molasses the weevils did not congregate, but there were more on the blocks not having molasses. The difference was not great, which showed that molasses had neither a decided repelling nor attracting influence.

Many other tests with molasses have been made since it was first tried in Texas in 1898, but none who have made scientific tests have found that molasses attract weevils.

Claims are now being made that a secret ingredient in a widely advertised mixture will attract weevils. No scientific tests seem to have been made to determine this. It has only been since the last crop was poisoned that claims have been made that a material had been found that would attract the weevil.

Entomologists have been working on this problem for many years and hundreds of things have been tried, therefore, in order to firmly establish a claim that a secret ingredient in a mixture will attract weevils there must be abundant clear cut proof.

It may be that something that attracts the weevil has been found. The writer hopes so, but from a survey of the evidence put forth, we must say that we do not know whether the mixture will attract weevils or not. Another season should develop fully the truth about the claim.

What is the Proof of the Success of a Boll Weevil Remedy?

IN JUDGING the merits of any boll weevil remedy, a farmer should require evidence based on check plot tests; that is, treated and untreated plots in a field. The difference in the yield of the two plots will, of course, measure the value of the remedy.

A comparison of one field with another, or a comparison of yield of a field this year with its yield last year, does not constitute proof. The reason such comparisons will not do is that boll weevil damage is spotted, as has previously been explained.

Where one treats a whole field, there is no proof afforded that the weevils were bad enough on that field to do serious harm. This could not be determined unless some rows or a portion of the field is left untreated.

Of course, if a mixture that attracts weevils is applied, the check plot would not work. The supposition is that weevils would be drawn off of the untreated plot to the treated plot and there would be no marked difference in the yield of the two.

One can, however, easily determine whether a material attracts boll weevils by placing a drop of mixture in reach of the weevils and observing whether or not they are drawn to it.

The safest way is to allow the experiment stations to do the experimenting. The experimenters of these institutions have no interest to serve and no motive except to find the exact truth. If, however, one wants to try new things before the stations have had time to try them, it is one's privilege, but a wise farmer who does not wait for authoritative tests will not go further than to carry on in a limited way experiments with these new remedies.

A CLOGGED sprayer hurts the human disposition more than it injures the insect or the disease. Is yours ready for its spring work?

Machine or Hand Milking?

Machine Milkers Are Being Adopted

By G. H. ALFORD

THE old-fashioned methods of harvesting grain and cultivating the fields have been radically changed during the past 50 years. A man would look foolish cutting wheat with a scythe. Yet 20 years hence it will probably look even more foolish to milk cows by hand. Hand milking wastes time every day in the year, whereas "hand harvesting" only wasted time at one season.

MR. ALFORD

Until recently everyone milked cows with the same slow, inefficient, hand method that was used 2,000 years ago. Now, however, hundreds of thousands of milking machines are in use that are an exact imitation of nature's method of milking. These machines can milk 20 cows while a man is milking seven or eight, for the machine is sucking on eight teats at once.

One of the greatest advantages of the milking machine is that it usually increases the milk yield of the cow. It is impossible for a man milking by hand to imitate the calf's mouth because he cannot suck with his hands.

Machine Action Is Natural

THE milking machine does, however, have the same sucking action as the calf, and it also squeezes the teat with its tongue when it swallows. This method of milking protects the delicate tissues and glands secreting the milk, and does away with the forcible pressure and severe pulling necessary in hand milking.

The development of the mechanical milker has been along natural lines, nature's method, and it is not surprising that modern dairies, many of them having purebred herds, are adopting milking machines and as rapidly as possible discarding the old-fashioned hand method.

Give Satisfaction

THERE are over 500,000 milking machines in use in the United States today and quite a number of these have been in use for seven, eight, and nine years continuously with excellent results. In practically every instance where a standard make of machine is used and kept in proper order it gives satisfaction. Machines that are not kept in proper order will not give good satisfaction, the same being true of almost any piece of machinery.

The teat and udder conditions are usually better where a milking machine is used than where the ordinary hired hand milkers do the work. The hand milker is somewhat irregular from day to day. On the other hand the milking machine is absolutely regular, never gets tired or irritable, and moreover, is a much closer imitation of the calf's mouth than a man's hand could possibly be.

The impersonal milking machine soon becomes a friend of every cow and it is interesting to note that the cows give down their milk more regularly and usually give greater volume when milked by machine than when milked by hand.

The writer recently interviewed a dairyman at Starkville, Miss., who has had a milking machine for about three years. This man was of an experimental turn of mind. When he first got the milker he had a cow he was going to send to the butcher. So for several days he put the milker on this cow for a solid hour at a time. He said the teats showed no signs of being damaged, nor the cow of discomfort.

It is, of course, self-evident that less dirt will get in the milk when the milking machine is used, as the pail is sealed so that not even stable air can come in contact with the milk.

Washing the Machines

THE machines are not hard to wash due to a novel method employed. It is as follows:

After the milking is finished, the suction of the machine draws clean water through the tubes, thus flushing them out. The teat cups and tubes are then put into a sterilizing solution and left there until next milking. This operation takes about two to three minutes, which, of course, is negligable in comparison with the time saved by the machine, which usually runs into a couple of hours of a man's time each day.

Once a week brushes are run through the tubes to thoroughly scour them out.

Saves Time

TIME saving is the outstanding feature of the milking machine. Take for instance a dairy of 15 cows. On the average it would take two men an hour to milk them. One man and the machine can do the work in 45 minutes. This is a saving of two hours a day for the first man and half an hour a day for the second man.

The most recent type of milking machine is the portable type which requires no installation of pipe lines. These machines are ready for milk when they are brought into the barn, as the complete unit including the little gas engine is mounted on wheels.

These machines can be procured in either electric or gasoline engine drive.

This type of machine, which is made by several companies, is more in line with the desires and requirements of the dairyman having a small or medium size herd of say eight, 12, 15, or 20 cows, as it is less expensive and requires less apparatus than the older type.

The Cheerful Plowman—By J. Edw. Tufft

THE COW TEST

I'M RATHER rushed and busy now while testing out my Brindle cow; it is a three months' butter test, and I would have her do her best. I'm feeding her on choicest hay and special rations every day. I'm brushing out her waving hair with tender touch and dainty care. I'm treating her as well, I ween, as any king could treat a queen. "You poor old chump!" my neighbors say, "You're getting sillier each day! You treasure that old cow, by jink, as though she were the missing link. A man would think to watch you slave, she were a queen and you a knave! What! Are you feeding her on hay and ordinary beans today? Why not on pie, cream-puffs, and cake, on sugar-plums and salmon steak? What is the bossie drinking now, just common water? Poor old cow! She should at least have ginger ale, or coca cola in her pail! Why, does she sleep on common straw just like her sisters and her ma? You should supply a feather bed and feather pillow for her head!" That's how my neighbors talk to me, but wait a while and you will see that when I finish up the test and my cow numbers with the best, these jesting folks from far and near will all come racing over here; they'll come in crowds, and flocks, and scads, they'll bring their brothers, sons and dads, and bid three prices and a half for Brindle's little spotted calf!

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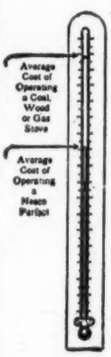

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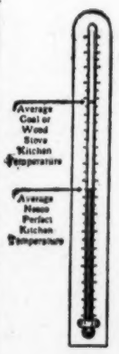

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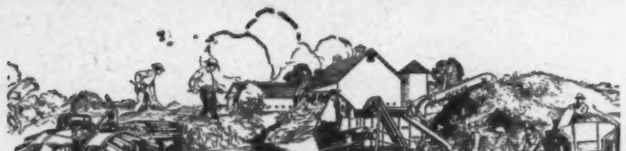

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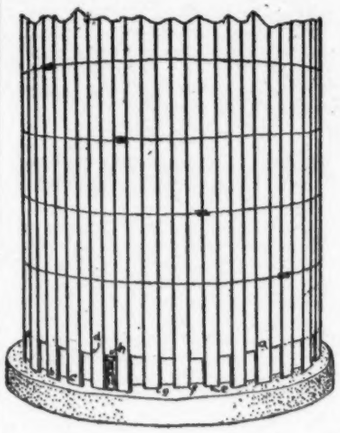
Repairing a Wood Stave Silo

Simple Procedure Carefully Outlined

By DAVID S. WEAVER

WOOD stave silos usually show signs of deterioration at the bottom of the stave long before the rest of the silo has in any way lost its usefulness. The exposed end of the grain of the wood resting on the foundation offers a good place for rotting to begin, especially as moisture is retained here longer than anywhere else in the silo. The spattering of mud and rain on the outside and the fact that the bottom of the silo is kept damp longer than the rest are reasons why rotting commences here. Many a silo in good condition otherwise has been replaced when it could have served for a good many more years if this bad portion had been removed. The following method of removing this material, making the silo as good as new except that the capacity is somewhat lessened has been used successfully even with very large silos.



The accompanying illustration should be studied and the steps followed in order, as indicated by the letters. All hoops should be tightened as much as they will stand, this is essential, as any slipping later will cause trouble. The bottom hoop should be removed as should any devices for anchoring silo to foundation and the guy wires, if any, should be loosened.

A line, "a" the same distance from the bottom should be drawn completely around the silo at a sufficient height to be above all the rotted wood. This can best be done by driving a small nail in every fifth stave and stretching a chalk line around the silo and resting on the nails. Care should be taken so that this line is the same height all around or the silo will lean when the lowering is completed.

The most substantial staves are left until last to serve as legs. b. c. etc. while the others are cut out by boring a one-inch hole in them and sawing along the line with a keyhole saw at d. These pieces are then knocked out. This process is continued until the silo is left standing on only the stronger staves. It is now evident why the hoops should be very tight.

Now start at one point and with a sharp saw take off about two inches of the bottom as at e. of one good stave; then the one next to it, f. and the one after that g. continuing in one direction until all the way around. The weight of the silo may be slightly lifted, thus relieving the pinching just in front of each saw cut by means of a screw jack, h. placed in the openings made by knocking out the poorest staves at first.

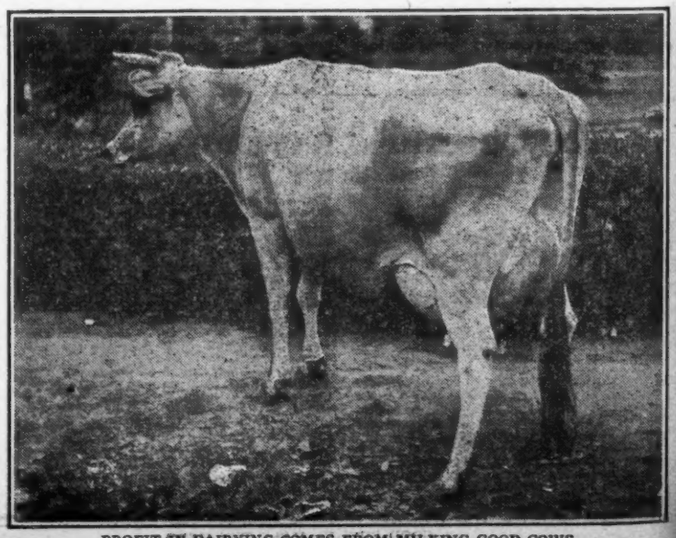
As the silo is slowly lowered, there will not be room for a jack, and a stout lever or some other device must be used to relieve the pinching of the saw. After the staves have all been cut to the line, the bottom hoop should be returned to its new position, the foundation clamps replaced and the guy wires tightened, the other hoops loosened and the silo is ready for use.

"To Win Without Bragging—To Lose Without Squealing"

THE slogan adopted by the Iowa Junior Clubs, "To win without bragging—to lose without squealing" is worthy of consideration by grown ups. If the junior club does nothing more for the youngsters than to thoroughly instil that thought into their minds, it will have done an inestimable amount of good.

The frequent illustrations that are given by adult exhibitors that they are not good losers makes it evident that they did not learn the Iowa slogan when young. Certain it is that there is much too much "squealing" done now in the judging ring and other places.

NO FARM is modern or progressive, however fine the cattle or the machinery, if the farm house has not running water and other conveniences.



PROFIT IN DAIRYING COMES FROM MILKING GOOD COWS

The Standardization of Milk

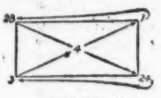
Rules and Explanations

STANDARDIZING milk or cream consists in raising or lowering the fat content to a fixed standard. This is done by adding to the material to be standardized, milk or cream of a higher or lower percentage of fat. In standardization there are two classes of problems involved: First, one in which a certain fixed amount of milk is to be made up or a certain amount of standardized milk is desired; second, one in which a certain amount of milk or cream is to be used and enough of another product added to make the mixture test a certain percentage of fat. In the latter case the amount of the mixture is indefinite.

The original method of computing problems in standardization is long and difficult, but a scheme has been devised which is comparatively simple*. The method is as follows:

Draw a rectangle and place in the center of it the percentage of fat desired. Place at the left hand corners

CUT NO. 1



CUT NO. 2

of the rectangle the percentages of fat in the materials to be mixed. Subtract the number in the center from the larger number at the left of the rectangle. Place the remainder on the diagonally opposite right hand corner of the rectangle. Subtract the smaller number on the left hand corner from the number in the center and place the remainder on the diagonally opposite right hand corner of the rectangle.

The two numbers on the right hand corners of the rectangle represent the number of pounds of material required. If these two numbers are added they will express the number of pounds of the mixture, which will contain a percentage of fat expressed by the number in the center of the rectangle. In each case the number on the right hand corner corresponds in fat test to the number on the left hand corner directly opposite.

Problem Number One

HOW many pounds of 40 per cent cream and 3 per cent milk must be mixed to make a milk testing 5 per cent? Using our diagram as described above we have the result shown in cut No. 1.

This means that if two pounds of 40 per cent cream are mixed with 35 pounds of 3 per cent milk, the result will be a 37 pound mixture testing 5 per cent.

Problem Number Two

HOW many pounds of 28 per cent cream and 3 per cent milk will be required to make 500 pounds of a mixture testing 4 per cent? In this problem a definite number of pounds of the mixture is required.

According to cut No. 2, one pound of 28 per cent cream is required to every 24 pounds of 3 per cent milk to make a mixture testing 4 per cent. This would make 25 pounds of the mixture, but 500 pounds is the amount desired. In other words, the number of pounds desired, is 20 times larger than the number of pounds on hand (500÷25=20). The amounts must be kept in the proportion of 1:24. Therefore, in order to get a 500-pound mixture it is necessary to multiply both the 1 and the 24 by 20. This would give a result of 20 pounds of 28 per cent cream and 480 pounds of 3 per cent milk, which mixed, will equal 500 pounds of 4 per cent milk.

Proof

IN WORKING problems in standardization, it is always wisest to prove the answer, as this is the best method of checking the work for mistakes. According to the conditions of the problem there would be 500 pounds of 4 per cent milk. This amount of milk would contain 20 pounds of fat (500 × .04=20). According to the results the 500 pounds would be made up of 480 pounds of 3 per cent milk and 20 pounds of 28 per cent cream. The 480 pounds of 3 per cent milk would contain 14.4 pounds of fat (480 × .03=14.4). The 20 pounds of 28 per cent cream would contain 5.6 pounds of fat (20 × .28=5.6). 14.4+5.6=20.

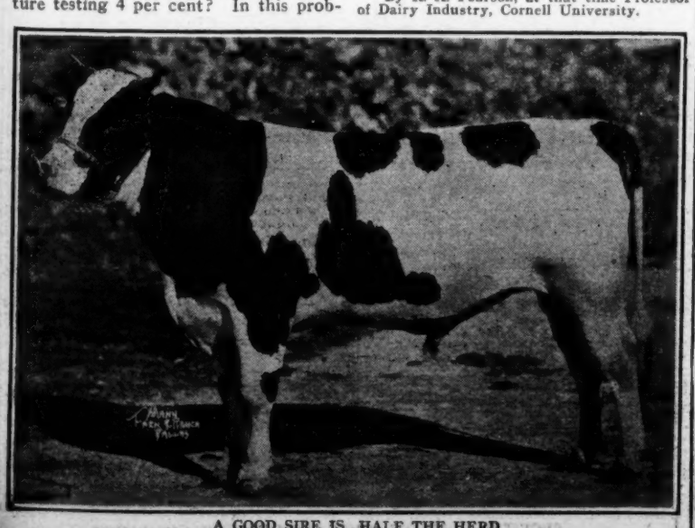
Since the 500 pounds contain 20 pounds of fat, and the materials of which the 500 pounds is made up furnish the 20 pounds of fat, the problem is worked correctly.

Problem Number Three

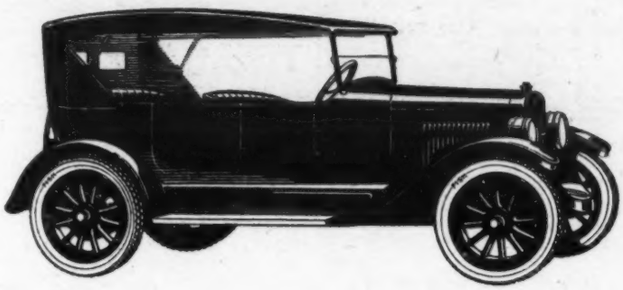
HOW many pounds of 3 per cent milk must be mixed with 150 pounds of 28 per cent cream to make a mixture testing 4 per cent? In this problem the number of pounds to be made up is not definitely known.

Working the problem by the rectangle scheme as in cut No. 2, we find that one part of 28 per cent cream is required for 24 parts of 3 per cent milk. According to the terms of the problem, 150 pounds of 28 per cent cream must be used, and this is 150 times as large as in the above proportion. The 28 per cent cream and 3 per cent milk must be kept in the proportion of 1: 24, and since the amount of 28 per cent cream is to be increased 150 times, the 3 per cent milk must also be increased 150 times. This would give 150 pounds of 28 per cent cream (1 x 150) and 3,600 pounds of 3 per cent milk (150 × 24=3,600), making in all 3,750 pounds (150 × 3,600=3,750) of a 4 per cent mixture.—From Cornell University Bulletin.

* By R. A. Pearson, at that time Professor of Dairy Industry, Cornell University.



A GOOD SIRE IS HALF THE HERD



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Make the Silo Small and High

And Feed Greater Depth of Silage Daily

By CLEMENT WHITE

"I BUILT my first silo too small, and ran out of silage before my steers were ready for market," said a farmer. "This experience convinced me that the size of the silo was an important consideration. When I planned my second silo I made allowances for additions to my dairy herd, and for a probable increase in the number of beef cattle on my farm. It isn't difficult to decide how large a silo to build. Remember that the average dairy cow or beef animal will eat 35 pounds of silage per day. It is advisable to have a surplus of silage for feeding to hogs, poultry, etc. I like to have enough silage on hand to supplement pasture when the grass becomes short.

"It is a mistake to build a silo which has too much diameter for the owner's feeding requirements. I find that fresh silage soon spoils when exposed to the air, so I want a silo which is not too large to permit at least two inches of silage to be removed daily after feeding commences.

Size of Silo

"IF you expect to feed about 1,000 pounds of silage daily, a silo 14 feet by 38 feet is a desirable size. This size of silo will hold about 125 tons of silage. Make the silo two feet higher and it will hold in the neighborhood of 135 tons. A silo 16 by 40 feet is a desirable size for the farmer who feeds about 1,400 pounds of silage daily. It has a capacity of from 175 to 180 tons.

"Small silos are profitable for small farms. The man who tills a small farm usually lacks pasture. The silo supplies an excellent substitute for green grass. He usually worries over a shortage of rough feed. This is another reason why he needs a silo. If his feeding requirements are small, he can build a 10 by 34 foot silo which will hold at least 50 tons of silage. The tall silo of small diameter is preferable for the small farmer. Silage will keep in this type of silo indefinitely, even though only a small amount is needed daily.

"The farmer who needs about 90 tons of silage will find a 12 by 38 foot silo well adapted for his requirements. When planning a silo, is is best to figure future requirements, and make it large enough to feed additional animals which will accumulate on a farm."

Kind of Silo

THE kind of silo to build often perplexes the farmer. The man who desires a permanent silo will find the hollow tile silo satisfactory. It has many advantages. In the first place the hollow tile silo offers excellent protection, insuring good silage. When properly erected, the hollow tile silo will last indefinitely. The first cost is the only expense; as there is no loss from fire, or from decay. When determining what kind of silo to erect, it is advisable to investigate the experiences of local owners, and see what kind of material appears most satisfactory. Flimsy, poorly-erected silos usually result in loss and disappointment. They are apt to crack and allow the silage to spoil. When empty, they are easily blown over when a gale strikes. The substantial, long-lasting silo is the most satisfactory and economical.

A good silo is an asset to the farm, and proves a profitable investment. It is desirable to locate the silo where it will be convenient for feeding, and where it can be reached conveniently at filling time. Where a silo is located in a small corral, it is dificult to "maneuver" the racks with their heavy loads of green bundles at filling time. There is less work and annoyance incident to filling the silo where ample space is provided for the racks and other equipment to maneuver. It is best to select a well-drained site for building the silo.

Building the Silo

REGARDLESS of the type of silo selected, it should be erected on a solid foundation. Liberal use of concrete when biulding the foundation will insure strength. A pit may be dug before the foundation is started, which will add to the capacity of the silo, and facilitate the building of a solid foundation.

Every farmer desires to avoid having moldy silage. The molds or their spores which ruin silage cannot thrive without air. The only way to prevent their growth is to make the silo air tight, avoid putting moldy roughness into the silo, avoid cutting the silage in pieces which are too large to pack snugly, and to tramp the silage thoroughly at filling time. There need be little spoiled silage, providing a good silo is erected. On the other hand, a warped or cracked silo insures spoiled feed.

Before a silo is filled it should be inspected to make certain that cracks have not appeared. The doors should set snugly so air will not enter.

There is no mystery connected with the making of good silage. Moreover, there is no mystery involved in feeding it.

Profit From Silage

"I made some money this winter because I had a silo," explained a farmer. "Things looked discouraging when I filled it; but I went ahead just the same. Then I had an opportunity to buy some cheap cattle. I fed them a ration of silage, corn and some alfalfa hay through the winter, and found a profitable market for my surplus feed. A supply of silage puts a man in position to lower feeding costs, and insures more rapid gains. I can make money by feeding silage, where I would work for nothing if I depended solely upon dry feed.

"Silage is the ideal succulent winter feed for cattle and other livestock. The dairy cow produces milk cheaply, and the steer takes on flesh economically when fed on good silage. I find silage a profitable feed for any season of the year."

Editorial Comment.—We think our correspondent has placed the capacity of his silo too high. He has followed the regular rule, but a silo 14 feet in diameter and 38 feet high would have to be filled to the top, which is impracticable, and a cubic foot of silage would have to average approximately 42.5 pounds to give a capacity of 125 tons. If one gets 110 tons in such a silo he will do well.

Similarly, a silo 16 feet in diameter and 40 feet high will not, in practice, store 175 to 180 tons of silage. The land required to produce a given amount of silage is usually underestimated and the amount of silage in the silo is usually overestimated, and from these errors disappointment often results.

If 150 to 160 tons of silage is put in a silo 16x40 feet, good, careful filling will be required. To hold 180 tons, it would have to be filled to the very top after settling and each cubic foot would have to weigh an average of approximately 45 pounds. A silo 10x34 feet will not hold 50 tons. Each cubic foot would have to average a weight of over 37 pounds and the silo cannot be filled to the complete top. If such a silo holds 45 tons, it will be about the limit.

Pharr Has Big Producers

THAT the dairy herd owned by King Pharr of Catherine, Alabama, is one of the very best herds in the South, is the opinion of Wm. Hardie, dairy specialist for the extension service.

A recent report received by Mr. Hardie from Mr. Pharr shows that Lookout Dorothy, a four-year-old cow, produced during February an average of six gallons of milk per day, containing 61.16 pounds of butterfat, or 76.5 pounds of butter. In a statement regarding this cow, Mr. Hardie said: "So far as I know this is the largest daily average for one month made by a Jersey cow in Alabama."

Magnets Tycoon Agatha 476274, another cow owned by Mr. Pharr, produced 104 pounds of butter during February. A third cow, which was a two-year-old, produced during the same month 52.5 pounds of butter, and a three-year-old cow produced 62.5 pounds. both being exceptional records for young cows.

Comparing the production of these cows and all others, Mr. Hardie said: "They produced two to four pounds per day, whereas the average production for all dairy cows in Alabama is less than one-third pound per day. Thus Mr. Pharr is demonstrating our possibilities."

Mr. Pharr started in dairying only a few years ago and is now one of the best known and most successful dairymen in Alabama.—Alabama Extension Service.

THE JERSEY IS ONE OF THE MOST POPULAR DAIRY BREEDS IN THE SOUTH

Sorghum or Corn for Silage?

Sorghum Shows Up Well at Auburn

By M. J. FUNCHESS

THE purpose of this article is to present the results of tests made by the Alabama Experiment Station to determine the relative yields of sorghums and of corn for silage purposes.

MR. FUNCHESS

The varieties of sorghum and of corn used in these tests were planted at the same time, fertilized and cultivated alike in every respect. Each variety of sorghum and of corn was harvested as nearly as possible at the right stage for silage purposes, and weighed.

Three varieties of sorghum and one of corn were used in the tests of 1920, on the farm at Auburn. October sorghum led the list this year, with a yield of 27,840 pounds. Texas Seeded sorghum ranked second with a yield of 20,266 pounds. Japanese sorghum ranked third with a yield of 16,106 pounds, and corn produced but 10,069 pounds.

In the tests at Auburn, in 1921, the sorghums yielded as follows: October, 27,810 pounds; Japanese sorghum, 26,325 pounds; Texas Seeded, 24,165 pounds; Amber, 14,085 pounds; Orange, 13,770 pounds; and Red Top, 12,825 pounds.

The results at Auburn in 1922 were as follows: October, 29,000 pounds; Texas Seeded, 24,800 pounds; Orange, 19,800 pounds; Red Top, 17,420 pounds; Amber, 10,850 pounds; while corn produced 10,950 pounds.

The average of two tests conducted in Montgomery County and one in Perry County, on black belt soil, gave the following yields: Texas Seeded cane, 43,335 pounds; Orange, 29,125 pounds; Red Top, 27,519 pounds; Amber, 20,510; Goliad corn, 15,734 pounds.

In a test in Mobile County in 1922, Texas Seeded sorghum produced 10,348 pounds. The other varieties gave the following yields: Red Top, 8,658 pounds; Orange, 7,733 pounds; Amber, 5,180 pounds. Under the same conditions, corn produced but 4,144 pounds.

Sorghum Is Good Producer

IT TAKES but a casual survey of the above results to show that corn falls far below the best sorghums in tons of silage produced. The sorghums are much more drouth resisting than corn, and hence may produce a heavier tonnage than corn under average Southern conditions. Considering our results as a whole, it appears safe to conclude that the best varieties of sorghum will produce from two to three times as much silage as corn will produce under the same conditions. On the lime lands of the Black Belt, sorghums have made a splendid showing, as indicated by an average of more than 20 tons per acre, as the results of three tests. On fertile sandy soils 10 to 15 tons per acre may be produced in average seasons. The animal husbandry department has produced about 10 tons per acre at Auburn during each of the past several years, showing that very good yields of sorghum may be had on average or below average land.

In feeding tests conducted at Auburn and elsewhere, it has been found that sorghum is about 90 per cent as good as corn silage. Anyone interested in specific questions regarding sorghum silage should write directly to the Animal Husbandry Department at Auburn, since this division has produced and fed more than 100 tons of this kind of silage during each of the past several years.

The best varieties of sorghum are the Texas Seeded and the October. The Texas Seeded variety is a standard one, seed of which may be had in almost any locality, or from most seed houses. On the other hand, the October sorghum seems to be but little known. It has been grown in a number of localities throughout Central Alabama, but seed of this kind are not likely to be found in the hands of seedsmen. In the tests at Auburn, this variety has out-yielded all others; unfortunately, it was not included in the tests made at other points in the state. October sorghum is the latest of all the varieties that we have tested.

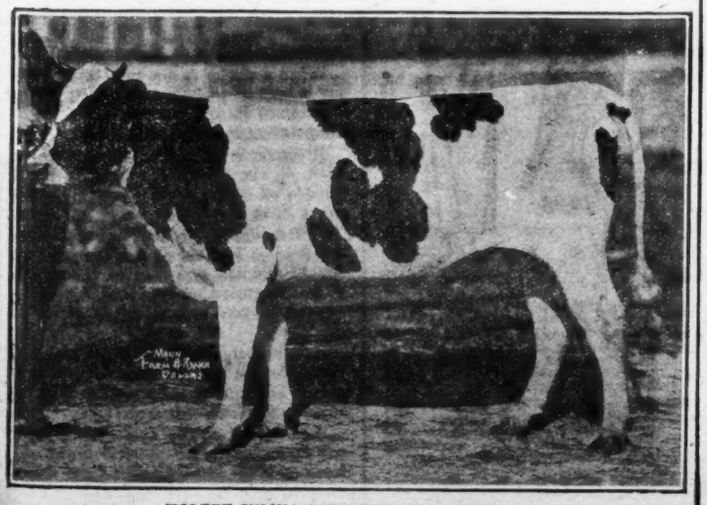
Fertilizing

AS TO the fertilizer needs of sorghum, it is doubtful if there is much specific information available. The writer is of the opinion that any treatment that will produce a good crop of corn should give good results with sorghum also. Sorghum will produce a larger tonnage than corn, and it may be well to fertilize it heavier than corn would be fertilized on the same land. With these points in mind, it is suggested that sorghum be fertilized with about 200 pounds of acid phosphate, 100 to 200 pounds of kainit, and 100 to 200 pounds of nitrate of soda per acre.

Spray or Dust Insects on Melons

GROWERS of watermelons or cantaloupes in Florida are reporting the appearance of the melon aphis in abundance. Curled or blackened leaves or unusual excitement among the ants in the melon field are signs of the presence of this insect.

Prof. J. R. Watson, entomologist of the Florida Experiment Station, recommends that growers keep a watch on their melons and when the aphis—or the signs of the aphis—appear, to spray or dust with a nicotine mixture.



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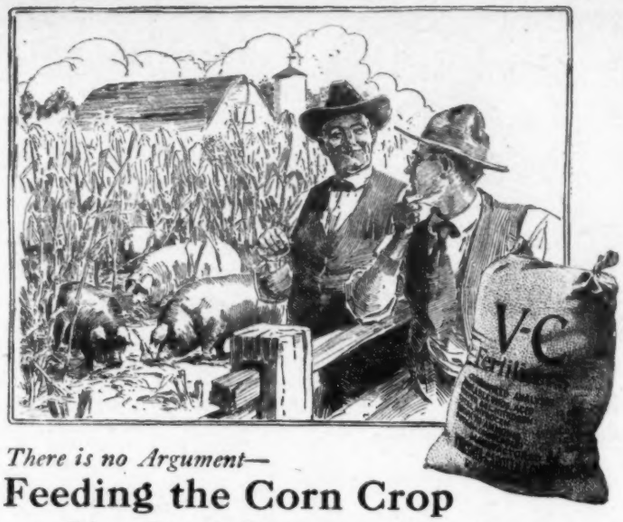
Junior champion Holstein heifer at the Southwestern Exposition and Fat Stock Show



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THE U. S. DEPARTMENT OF AGRICULTURE has spent millions of dollars and many years to determine the best means of boll weevil control. Dusting with calcium arsenate is the only approved method.

Cotton is high! Don't risk your 1923 crop but follow the advice of the U. S. Dept. of Agriculture and your own state authorities. Use only the dust method of application.

Do not experiment with untried, unendorsed "mixtures" of calcium arsenate and any other substance.

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Did you ever stop to think how many revolutions the wheel of a windmill makes? If the wheel of an Aermotor should roll along the surface of the ground at the same speed that it makes when pumping water it would encircle the world in 90 days, or would go four times around in a year. It would travel on an average 275 miles per day or about 30 miles per hour for 9 hours each day. An automobile which keeps up that pace day after day needs a thorough oiling at least once a week. Isn't it marvelous, then, that a windmill has been made which will go 50 times as long as the best automobile with one oiling?

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For full information write **AERMOTOR CO.** Chicago Kansas City Dallas Minneapolis Des Moines Oakland

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The Progressive Farm Woman

Mrs W. N. Hutt, Editor

Suggestions Concerning Milk

THE milk way is the health way.

Ice cream is not a luxury; it is a highly nutritious food.

Cheese is the staff of life of many nations. Why not in the U. S. A.?

MRS. HUTT

The dairy cow is indispensable to a greater agriculture and a greater nation.

Milk and its products are nature's best foods—eat and use more of them.

Butter is indispensable to growth and health—there is no substitute for butter.

The purchase of a good milk cow is one way to insure the health of the family.

One glass of milk requires two hours for digestion in a normal condition of the body.

Allow each member of the family a quart of milk a day and all the butter they wish before selling any of either.

The bottle of milk in the school child's lunch will be more thoroughly enjoyed if straws are provided with which to drink it.

Teach the children to feel that the family cow is one of their best friends and that they owe it to her to see that she is happy, comfortable and well fed.

Milk is easily digested and is very nourishing. It makes bone, brawn and blood. In fact, the vigor and success of a nation depends largely upon the amount of milk it uses.

If your child thinks he does not like milk, try serving it to him in the form of milk soups, custards, corn starch, and other simple desserts and ice creams.

We know that proper food and nourishment induce growth, health and happiness, and that a wider use of dairy products on the tables and in the kitchens of our homes means a healthier, a more efficient and a more cheaply fed nation.

A survey of 55,000 school children of the Los Angeles, California, schools revealed the startling fact that those who drank milk completed the first eight grades of school work two years earlier than those who did not use milk. The milk drinkers were also much superior in all forms of athletics. Has your child had his quart of milk today?

The Reason That Milk Is Valuable

THERE are always people from Missouri who say, "Show me." To such the reason and why-and-wherefore of milk being valuable may be interesting.

As preliminary knowledge, one must have the facts that the muscles and organs of the body are made up mostly of proteins, that these are continually breaking down and must be restored and that there are vegetable as well as animal proteins. Vegetable proteins we get in nuts, flour, peas, beans, cereals such as wheat, corn, barley and oats, etc. Animal proteins we get chiefly in milk, cheese, meat, fish, and eggs.

Proteins are necessary to build more proteins, but just as a tree in a forest must be felled and split into its parts before it can be of service in making heat and cooking the food we eat, so must the protein be split into amino acids before they can be valuable in making the muscles that change sugar and starch into heat and mechanical work.

These amino acids, these chemical compounds, are many in number. Every different protein contains a different combination of these acids. Those present in corn are not in liver, those in wheat are not in milk, and so on. The amino acids of peas, beans, nuts, etc., are good, but they can be depended on to support growth best only when supported by the abundant and different amino acids of milk and meat. Dr. E. V. McCollum, an authority on the subject, says: "By a complete food protein we mean one which would supply all the amino acids needed by the human body. Milk, cheese, flesh foods, and eggs contain all the amino acids necessary to build the protein of the human body."

Meat has long been considered paramount. Meat is best in the sense that it gives flavor, excites the digestive juices, makes exercise for the teeth; but milk is best as a supplement to the other foods, not because it is better than meat, but because it contains vitamines and mineral salts. Meat is good but too many people are unreasonable slaves to it.

Milk is often called the perfect food, but as every rule is said to have its exception and every ointment its fly, so has milk its lack. This deficiency is its low content of iron and sometimes of the fat soluble vitamine found in cream.

If one eats every day a generous serving of some leafy vegetable as turnip greens or spinach, and twice or more a day some fresh raw fruit or vegetable, this fault is corrected. Many people who consider themselves well really lack vitality and are nervous, irritable or depressed, simply because of slight nutritional disturbances that might be corrected by the regular and generous use of milk, one of the best of the protective foods.

Making Cottage Cheese

THE process of making cottage cheese without rennet or pepsin, on the basis of 30 pounds or about 3½ gallons of milk, which will yield about 5¼ pounds of cheese, may be summarized as follows:

Obtain clean, fresh milk.

If starter is not used, warm the milk to 75 degrees F. and hold it at about that temperature until curdled.

If starter is to be used, add 1 to 5 per cent, or about 1 pint of starter to 30 pounds of milk, stir, and set away at 75 degrees F. to curdle.

If it is desired to Pasteurize, heat milk to 145 degrees F., hold at that temperature for 30 minutes, and cool to 75 degrees F. If Pasteurization is practiced, a starter must be used and should be added after Pasteurization, as described.

Time for curdling when starter is used, 12 to 15 hours (usually overnight).

When starter is not used, the time for curdling will be about 30 hours.

Cut and stir, and then heat to 100 degrees F., and hold for 30 minutes. Stir gently at intervals.

Pour upon cheesecloth and drain for 20 or 30 minutes.

Place in pail or pan and salt at the rate of 2½ ounces to 10 pounds of curd, or about 2 level tablespoonfuls for the cheese from 30 pounds of milk.

If desired, add sweet or sour cream at the rate of ½ pint to 10 pounds of curd, or about ¼ pint of cream to the product from 30 pounds of milk.—Farmers' Bulletin, 850.

Rennet or Pepsin Process

THE following is an outline of the process with rennet or pepsin on the basis of 30 pounds or 3½ gallons of milk, which will yield about 5¼ pounds of cheese:

Obtain clean, fresh milk.

When a starter is not used, after adding rennet or pepsin, warm the milk to 75 degrees F. and hold it at about that temperature until curdled.

If starter is to be used, add 1 to 5 per cent, or about 1 pint of starter to 30 pounds of milk, and set away at 75 degrees F. to curdle.

If it is desired to Pasteurize, heat to 145 degrees F., hold at that temperature for 30 minutes, and cool to 75 degrees F. If Pasteurization is practiced, a starter must be used and should be added as described.

Add rennet, junket tablets, or pepsin just before setting the milk away to curdle at 75 degrees F., carefully stirring to insure a thorough distribution.

Add rennet at the rate of one-third cubic centimeter, or about 8 drops, diluted 40 times in cold water (half a cup of cold water is satisfactory) for each 30 pounds or 3½ gallons of milk.

Or, dissolve one junket tablet in a pint

Our Pattern Department

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1393—Smart Afternoon Style.—Cut in sizes 16 years, 36, 38, 40 and 42 inches bust measure. Size 36 requires 3¼ yards 36-inch material with 1⅛ yards 36-inch contrasting color.

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of cold water and use one-third of the mixture.

Or, dissolve powdered pepsin (one-half size of pea) in ¼ pint of cold water and use one-third of the mixture.

Time for curdling when starter is used, 12 to 15 hours (usually overnight).

When the starter is not used the time for curdling will be about 30 hours.

Pour upon cotton sheeting and drain for 20 or 30 minutes.

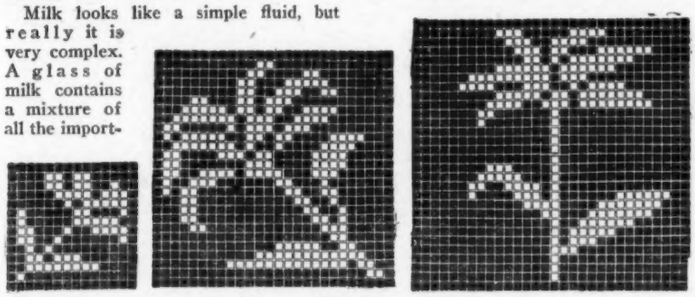
Tie the ends of the cloth together and press with weights (20 or 25 pounds) until the curd has attained the desired consistency.

Salt at the rate of 2½ ounces to 10 pounds of curd. If desired, add sweet or sour cream at the rate of ½ pint of cream to each 10 pounds of curd, or ¼ pint of cream to the product from 30 pounds of milk.

Milk Is the Best Food

"MILK is the best food we have. There is no substitute. Save on other things if you must, but not on milk. You cannot afford to do without it—growing children especially need plenty. Buy at least a pint of milk a day for each person in the household. No other food can take its place. Use it all, do not waste a drop." So says Dr. Rosenau in his bulletin, "All About Milk."

Milk looks like a simple fluid, but really it is very complex. A glass of milk contains a mixture of all the important things that make up a mixed diet. One can get the same nourishment from milk as from a meal made up of meat and eggs, sugar and cereals, oils and fats, with salt and water.



THINGS YOU WILL LIKE TO MAKE

These three simple little filet crochet motifs are easy to copy and appropriate for a number of things. They are especially good on table linens and towels.

Milk is a good fuel because it contains fat and sugar. The body needs fuel to keep it warm and to make it move and work and play, just as the steam engine needs coal or the automobile needs gasoline. One quart of milk is about equal in fuel value to either of the following: 2 pounds of salt codfish, 3 pounds fresh codfish, 4 pounds beets, 5 pounds turnips, 1-6 pound butter, 1-3 pound wheat flour, 3-4 pound lean round beef, 2 pounds potatoes, 6 pounds spinach, 7 pounds lettuce, 4 pounds cabbage, or 8 eggs.

One ordinary glass of milk is about equal in fuel value to: 2 large eggs, 1 large serving of lean meat, 2 moderate-sized potatoes, 5 tablespoons of cooked cereal, 3 tablespoons of boiled rice, or 2 slices of bread.

Food is more than fuel—it repairs waste, helps growth, builds flesh and bone. Milk does all this. That is, milk is a good food, not only because it is a good fuel, but also because it has life-giving properties. Milk is both fuel and food. Milk is rich in vitamines. It contains all the different kinds of vitamines which are essential to life.

Milk contains a great deal of lime. Children need lime and plenty of it, especially for their growing bones and teeth. The lime in milk is easily changed in the body into bone. Big boys and girls, and even grown people, need lime, because the bones are always wearing away, little by little, and this wear and tear must be replaced. Lime helps build bones and makes them strong.

Milk not only contains plenty of lime but also plenty of phosphates in the form of phosphate of lime. In order to utilize this salt best, especially for growing bones and to prevent rickets, it is important to have a certain amount of sunlight.

Milk for Children

MILK is an absolute necessity for growing children. Each child should have a quart of milk a day. Milk should not be the only food for children who are weaned, of course. They need vegetables, fruits, cereals, eggs and some meat. One of the reasons that milk is especially good for children is that it has vital substances (vitamines) that help growth. Children can get a little of these vital substances in other foods, but they are sure to get enough of them if they drink three glasses of milk every day. Give your boys and girls milk and a chance to grow. Milk also has other valuable things that build bone, make firm flesh, and put glow in the cheeks.

Milk also helps your children to keep well. Look at children who do not get milk, but tea and coffee instead. They are apt to be pale and sickly. Tea and coffee are not foods, but drugs. They stimulate, but do not nourish. Children are better off without stimulants. Give the children fresh clean milk and plenty of it. This will help them to grow up strong and well. Save on other things if you must, but do not save on milk.

Buttermilk

WHEN milk curdles, very much the same thing takes place as when an egg is heated—the albuminous matter is made hard, lumpy, and insoluble. The curd is the thickened albumin of the milk.

Rennet also causes milk to curdle. This is the ferment found in the gastric juice; hence, the first thing that happens to milk when it reaches the stomach is to become curdled. The curd is then acted upon by the pepsin and digested. If the lumps are large and tough, the digestion is slower than if the lumps are soft and small. Therefore, drink milk slowly.

Buttermilk is curdled milk from which the fat has been removed. It may be a sweet curd or a sour curd. Buttermilk is a pleasant, refreshing beverage and a nourishing food. It has practically all the food value of milk except the fat, most of which is removed by churning to make butter.

Milk Soups

THE ingredients of milk soups may be grouped under four heads: A liquid, a starchy substance used for thickening, a fatty substance and flavoring. The liquid may be milk, either whole or skimmed or a mixture of milk and one or more of the following: Meat stock, cream or vegetable juice including pulp. The starchy substance may be flour, bread crumbs or potatoes. Butter is the best fat for children, hence, butter should be used in soups which are to be served to children, but bacon or other fats may be used for elders.

The proportions are usually a level tablespoonful of flour and an equal amount of butter to each cup of liquid. The following recipe will make six servings. For variety, other vegetables may be substituted for the peas. These may be spinach, corn, onion or tomato.

One can peas or 1 quart fresh peas, 1 quart of milk including liquid of peas, 2 tablespoonfuls butter, 2 tablespoonfuls flour, 1 teaspoon salt, ⅛ teaspoon pepper, 1 slice onion.

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UNPROFITABLE hens or "boarder-cows" are now-a-days culled out. The scrub passes—the pure-bred remains. You choose with utmost care. Your flocks and herds improve, and therefore you benefit.

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each box containing 7 cakes fine Toilet Soap and with every box, give as premiums to each purchaser all of the following articles: a Pound of Baking Powder, Bottle Perfume, Box Talcum Powder, 6 Teaspoons, Pair Shears and Package Needles, (as per Plan 2351) and this artistically decorated Dinner Set is Yours. Many other equally attractive offers and hundreds of useful Premiums or large cash Commissions.

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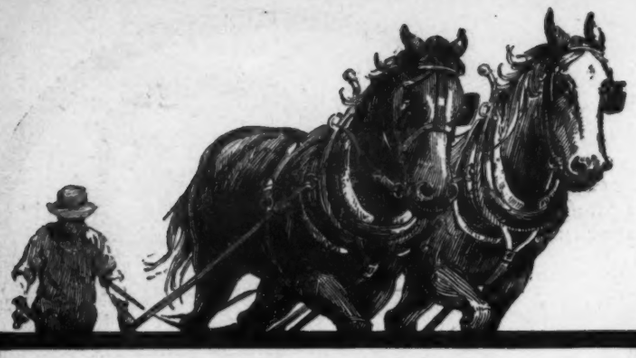

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on each acre are now recognized as the only combination which will produce a full cotton crop under boll weevil conditions.

The Nitrate starts quick growth and keeps the cotton growing, causes the squares to form so early that when the weevils arrive in force the bolls are tough enough to resist puncture. This insures a full crop from the early pickings.

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How Plants Breathe and Get Their Food

"WOULDN'T you like to know how our crops and other plants live and take care of themselves in their homes in the ground? Well, let's find out. Just like people and animals, plants must drink, perspire, breathe, and eat. Today we are going to learn how plants drink and perspire." With this introduction, the teacher pulled up a young corn plant by the roots. The corn had been planted several weeks before in a flower plot, to be used for this purpose. Pointing to the roots of the corn plant she continued:

"Plants drink through their roots. These thread-like roots, you notice, creep out on every side in their search for food and drink. At this point there is another thing we want to think about. All plants need a certain amount of food from the earth such as nitrogen, potash, phosphorus, and the like. But the roots won't take in their foods unless they are dissolved in water. The food in a solid form cannot be taken in by the thread-like roots. So when the plant wants some food that the little roots are not able to take in, it melts or dissolves the solid food by means of an acid which comes out of the roots. When the roots touch the food they send out some of this acid. Then after the food is melted, the roots suck it in. Thus, we see that plants drink through their roots and that all their earthy food is taken in the form of broth or soup.

"Since the plants get their food dissolved in water naturally they have to drink a lot of water to get enough. You can imagine how much water we would have to drink if all our food were dissolved in it. A plant needs to keep only a small part of the water that comes in through the roots, therefore it must have some way of getting rid of that which it cannot use. The plant does this by letting the water escape through the leaves into the air. When water passes from your hand, you say you are perspiring, and when water passes from the plant we can say that the plant is perspiring. Of course, when the water that is not needed escapes from the plant it leaves behind the food it contained. After the food is prepared properly, it is ready to be used by the plant.

"You would hardly believe it, but it is said that for every pound of growth made by a plant, from 300 to 800 pounds of water pass through the roots and into the plant." UNCLE P. F.

Suggestions to Teachers

PLANT corn or beans in a box at school. When the plants are large enough, pull them up by the roots and show pupils the root hairs.

2. Place radish seeds between two pieces of blotting paper. Cover, and at one end let the blotters hang in water to keep them from becoming too dry. Root hairs will form in a few days.

3. Insert a glass over a growing plant. Notice the moisture that collects on the inside. This experiment shows that plants perspire.

4. References: Any elementary text on agriculture or nature-study.

5. Assign nature-study questions.

The Honey Bee

(Boys' $1 Prize Letter)

A COLONY of bees is composed of three kinds of individuals—the queen, who is the mother; the workers, who do all the work, and the drones. The queen lays the eggs that hatch into the young bees. She can lay eggs to hatch into a worker or drone brood, whichever she wishes. Worker larvae are fed on a mixture of honey and pollen which has been predigested by the nurse bees, which are bees from two days to two weeks old, and are too young to go out after pollen and honey.

When a colony of bees becomes for any reason dissatisfied with its hive, the workers build about 16 queen cells and a freshly hatched worker brood is placed in them. Queen larvae are fed on much richer food than the larvae which are to make workers. When one of these hatches into a queen, the old queen leaves the hive with part of the bees. I have seen swarms which had at least a peck of bees in them. The first young queen to hatch out destroys all the other queen cells as there cannot be more than one queen in a hive except in rare cases. The chief causes of swarming are, not having enough room, having too much sunlight so as to make the hive too hot, and too much room.

It is unprofitable to the honey producer to let his hives swarm, as I have found by experience. Last year I had two of my colonies very strong in the spring. While I was away from home one of them swarmed and the swarm was hived. The other colony didn't swarm. That year the colony that didn't swarm made 95 pounds of honey, while the other made only a little over half that much. DAVID GREER.

Tomatoes for Northern Cities

(Girls' $1 Prize Letter)

I HAVE always lived on a farm and, of course, think it the best place for boys and girls to grow up, with the pigs and calves, and be able to look out every day and see tall oaks and pines. My Dad raises cabbage, carrots, beans, and tomatoes to ship to Northern cities to help feed other little boys and girls. I have tied and pruned tomatoes ever since I can remember, for there is always work for the littlest on a truck farm. If Uncle P. F. were to happen along in June he would see me wrapping and packing them, too. We tie beets and carrots in bunches and throw them in the water and wash them. It is great fun.

Sometimes along about Easter when tomatoes are all in the field and growing, the old cold wave whistle blows and we all have to get our hoes and rake dirt over them to keep them from freezing. And oh, how our backs ache when we have to scratch them out!

Mississippi. VERNA SLAY.

This Week's Nature-study Questions

WHAT part of the weight of ordinary green growing plants consists of water?

2. How much water may freshly cured hay contain?

3. How much water may hay which is dry enough to keep without spoiling contain?

4. When new corn is ripe enough to husk, about how much water does it contain?

5. Is this enough to cause the corn to spoil if it is housed in a not well ventilated storage room?

Answers to Last Week's Questions

DO BACTERIA belong to the animal or vegetable kingdom? Bacteria belong to the vegetable kingdom. Each individual is a tiny plant without roots, leaves or stem.

2. Do bacteria like a wet or sour soil? No.

3. Are bacteria found in rocks? No.

4. How deep in the soil do bacteria live? Hardly ever found below the depth to which the plow goes.

Profit and the Feed Trough

Good Cows Well Fed Produce Well

By J. A. AREY

JUDGING from the kind and amount of feed that many of our cows receive, one is forced to the conclusion that scrub feeding methods are as much responsible for low profits in our dairy business as scrub breeding and scrub cattle.

It makes no difference whether your barn be filled with grades or high price purebreds, profits will be disappointing unless good methods are practiced at the feed trough. This fact is well illustrated by an experiment conducted by the Iowa Experiment Station several years ago to determine the value of the purebred bull in increasing production when used on scrub cows. In order to secure cows for this experiment, with as little improved blood as possible they were obtained in the Ozark Mountains of Arkansas. These animals were brought to the experiment station farm and well fed with the result that their average annual butterfat production was 169 pounds, or greater than that of the average North Carolina cow. The point is, that although these cows were very low grade scrubs, when fed well their production was not so bad after all.

The importance of securing purebred bulls and building up our herds with improved blood cannot be over-estimated, but until our dairymen realize the importance of growing an abundance of feed crops for the cows they now own, little real dairy progress will be made and profits will remain low.

Grow Plenty of Hay

SINCE hay is the basis of the dairy ration, provision should be made this spring for growing at least one and one-half tons of legume hay for each cow to be fed next winter. Some dairymen will provide this hay in the form of a winter legume which is already planted, but there are many other dairymen in the Cotton Belt that have not sowed a winter legume and it is these men who should see to it this spring that a sufficient acreage is seeded to either soy beans or cowpeas to furnish the amount of hay needed for next winter.

Mineral matter is very important for the milk cow. Milk contains probably more lime than any of our ordinary human foods. The most convenient method of supplying mineral matter to the dairy cow is through a legume hay which contains a high percentage of this material when compared with other dairy feeds.

On every farm there is a certain amount of low protein roughages grown, such as corn stover, oat straw, meadow hay, etc., which can be fed, but by no means should they make up the major part of the roughage ration if economical production is expected.

Provide Succulent Feeds

AFTER making adequate provision for the production of legume hay a sufficient acreage should be put aside on every dairy farm this spring to be planted in a succulent feed crop for use next winter.

Succulence is of prime importance in securing a good milk flow in the winter and early spring months. It not only causes an increase in the milk flow, but it tends to keep the cow's digestive system in a normal condition and causes her to consume a heavier ration than when fed on dry feeds, hence a larger amount of nutrients are available for milk production after the maintenance requirements of the body are met. Succulence is furnished in the form of grass in the summer and some substitute for grass must be fed in the winter months if a liberal milk flow is obtained. Silage is our best and most economical crop for this purpose for dairymen who are feeding ten or more cows.

For herds of less than 10 head, stock beets should be provided instead of silage, since the erection of a silo for a small number of cows is impractical and beets can be satisfactorily stored in cellars or hilled up as potatoes after cutting the tops off. Mangel beets are most satisfactory for this purpose and will yield 10 to 20 tons per acre when grown in a fertile, moist soil. It will require from three to four tons of either corn silage or mangels to feed an average sized milk cow through the winter and early spring months.

Normal milk contains 87 per cent water, hence the importance of supplying a feed that has a high water content at all seasons of the year in order to obtain a maximum milk flow.

Balance the Ration

IN ORDER for the milk cow to produce most economically her ration must be well balanced, that is, contain the proper ratio of protein to carbohydrates. This can be obtained by supplementing the rough or long feeds with grain mixtures, several of which follow:

Grain mixtures to be used when a combination of low and high protein roughages, such as clover hay, soy bean hay, alfalfa, corn stover or mixed meadow hay are being fed.

MIXTURE NO. 1

200 lbs. corn chops
100 lbs. ground oats
100 lbs. wheat bran
100 lbs. cottonseed meal
50 lbs. linseed meal

MIXTURE NO. 2

400 lbs. corn chops.
200 lbs. cottonseed meal
100 lbs. wheat bran

When the roughage used contains a high percentage of protein such as, alfalfa, soy bean or clover hay, use the following mixtures:

MIXTURE NO. 1

600 lbs. corn chops
100 lbs. cottonseed meal
100 lbs. wheat bran

MIXTURE NO. 2

500 lbs. corn chops
200 lbs. wheat bran
100 lbs. cottonseed meal

When legume hays are not available the following grain mixtures are recommended to be fed with such roughages as corn stover, mixed hay and corn silage.

MIXTURE NO. 1

200 lbs. corn chops
200 lbs. cottonseed meal
100 lbs. ground oats
100 lbs. wheat bran

MIXTURE NO. 2

100 lbs. corn chops
100 lbs. wheat bran
100 lbs. cottonseed meal

These mixtures are made up largely of local feeds in order to keep down the expense of shipping in feed from other sections of the country. They will give good results when fed at the rate of one pound of grain mixture to each three pounds of milk produced daily.

For Holsteins and other cows giving a heavy flow of milk testing from 3 to 4 per cent fat, one pound of grain to each three and one-half to four pounds of milk will be sufficient. No hard and fast rules can be given in feeding dairy cattle. The feeder must study his individual cows and feed each according to her ability to produce.

The dairyman who makes provision this summer for an abundant supply of legume hay and feeds the grain mixture suggested above that is best adapted to his local conditions should get profitable returns from his cow. However, so long as our cows are fed largely on high priced purchased hay and go without a winter succulent feed, and receive only a scant grain ration, and that not made up of the proper feeds, we can expect low production and little profit in the dairy business, regardless of the grade of cows in our barns.

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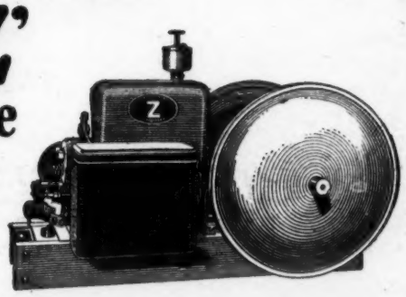

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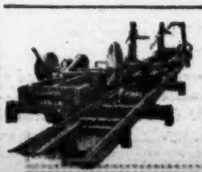

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Peanuts PAY!

When Picked the Benthall Way

PLANT Peanuts The world needs more peanuts and will pay the farmers who grow them. Plan now to plant at least 10 acres to the plow. Weevils are cutting down the cotton yield. There is a shortage of vegetable oils and of cotton seed meal. Peanuts furnish a better oil and a better meal. The demand for peanuts in candy and other food is growing by leaps and bounds. Grow them and make money. The 1923 crop is sure to sell high.

Peanuts Pay Better Than Corn

At this time peanuts are selling at about $2.40 a bu. according to variety. Yet, land that will grow 25 bu. corn per acre will usually grow 30 bu. of peanuts or more. An acre of corn returns $21.25—an acre of peanuts will return $72. In addition, you have peanut vine hay which is the equal in feed value of alfalfa. See the difference.

Pick Them So They'll Keep

To get the most from your crop, the shells must be uncracked to keep the weevils out. Buyers often pay 25¢ more per bushel for Benthall-picked goobers. With a Benthall Picker you can get your crop ready to sell quickly or your peanuts will keep. You can sell on the best market.

Saves The Vines For Hay

Unlike machines with cylinders, it does not thresh the vines to smithereens and make them unfit for feed. Delivers the hay in excellent condition.

Make Money In 1923 —Here's The Way

I want to get in touch with every man who plants 10 acres or more. I will help you make money in two ways. First, I will send you my rock-bottom proposition on the Benthall Peanut Picker and from time to time, I will send you letters and reports on the peanut situation—the latest information from Suffolk—the heart of the peanut industry.

To get this information simply write me how many acres you intend to plant.

C. A. SHOOP, Secretary.

Benthall Machine Co.,

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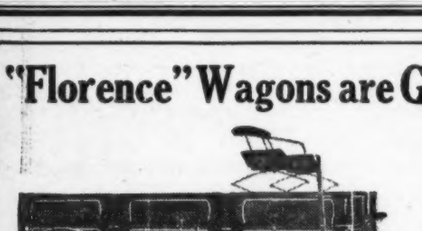

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Crop and Livestock Notes

Cleanliness Profitable in Production of Milk and Butter

CLEANLINESS and low temperature are the two principal factors in producing high quality cream and milk on the farm. This is essential to producing high quality butter, which not only means a higher price, but may also mean the difference between a ready market and no sale at all. Within the last few years butter scoring 92 has commanded 10 cents more per pound than butter scoring 87. Besides increasing price, good quality butter will increase consumption and thus return a double benefit to the producer.

It has been a common mistake that to make butter the cream must be soured on the farm. However, the highest quality butter is made from sweet cream that is soured at the creamery with a "starter" or specially prepared bacterial culture.

Cream slightly soured is not very objectionable, on the other hand dirty and extremely sour cream can never be made into good quality butter.

The cause of souring is due to bacteria, which are in all kinds of dirt and filth and grow very rapidly at high temperatures. By cleanliness in production and promptness in cooling the bacterial count and souring can be kept down to the minimum.

Separate the cream while the milk is still warm. Put the cream in scalded cans and cool by putting in water either in trough, cooling tank or some other convenient way. Never pour warm cream into that already cooled as it will produce a disagreeable flavor. Cream should be shipped to the creamery twice a week in winter and three times a week in the summer.

The competition with outside dairymen is going on right now and will become keener in the future. The only way to combat is by producing high quality products which begins with the care of cream on the farm. There is never an oversupply of real high quality cream and butter and such products always bring the top of the market.

Semi-monthly Crop Report for the Southeast

FARM operations on the heavier lands of the northern half of the belt have been considerably delayed during the past two weeks by rains and inclement weather, according to the reports of the Southeastern statisticians of the Bureau of Agricultural Economics, North Carolina to Alabama, inclusive, compiled by the local statistician. Damage to fruit by the freeze of March 19 and 20 was not so severe as first estimated, the report continues.

Cotton. — Cotton planting continues with excellent weather for germination in Florida. A noticeable increase in acreage outside of the regular cotton territory is reported in that state. Extra early cotton was damaged by freezing weather throughout the rest of the territory, much of which has been replanted. Planting is now general on the lighter soils as far north as the southeastern counties of North Carolina. Very heavy increase in the use of fertilizer is noted. The season is very late in all the Piedmont or heavier soil sections.

Corn.—Planting is well advanced in Florida, with early plantings up to a good stand. Acreage about the same in that state. Corn is being replanted in other Southeastern states where early plantings were severely injured by cold.

Small Grains. — Condition of small grains shows some improvement over two weeks ago. The crop is heading in Central Florida and is well advanced in the Coastal Plain section, but somewhat injured and late in Northwest Georgia and Tennessee.

Potatoes.—Irish potatoes are making good growth in Florida. Cold caused noticeable damage throughout the rest of the territory, with the exception of South Carolina, where the damage was very slight. Planting has been delayed in the Upper Piedmont section and in Tennessee.

Sweet potato draws are being transplanted in Florida.

Tobacco.—Transplanting in Florida is later than usual. Some damage reported to tobacco in fields and to seedbeds in remainder of the territory. General indications are for an appreciably increased acreage.

Fruits—Injury to peaches by freeze on March 19 was not so severe as was first estimated. The orange bloom is heavy, but a light bloom is general for grapefruit. Late peaches and peas are showing a heavy bloom in Florida. A large crop of fruit buds in all territory previous to the freeze probably accounts for the survival of a reasonable crop. Tennessee strawberries seem to have escaped injury.

Truck Crops.—Truck crops of Florida are in good condition, following needed rains. Movement of beans and cucumbers increasing in that state. Watermelons are running in South Florida; some difficulty in getting a good stand in North Florida and Georgia, with much replanting.

Pastures are reported good in Florida, but only fair in the northern part of the region, being reported extremely backward in Tennessee.—Compiled by V. C. Childs from notes of the Southeastern Statisticians.

ANNA DEKOL OF STRICKLAND FARMS 261233
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Beekeeping the Year Round

By R. B. REPPERT

What to Do in April

UNCERTAIN weather conditions during the latter part of March and early April makes it difficult to give advice for this season that can be safely followed by the novice in beekeeping without himself making allowances for weather changes.

Should weather conditions be unfavorable for nectar production, the bees may yet require feeding. Keep a sharp watch for this.

If pollen and nectar are abundant, the bees will soon be preparing to swarm, unless plenty of room is given. Swarming may, in many cases, be prevented by allowing extra supers and enlarging the entrance.

Should queen cells indicate an inclination on the part of the bees to swarm in spite of all precautions taken, they may be divided, amounting to artificial swarm production without the trouble attending the ordinary hiving of a collected swarm. To do this, take at least half of the frames containing sealed brood, with all bees adhering to them, and place in a new hive body in a new location. In the old hive, be sure that there are some queen cells on the frames. Supplement the frames in each hive, containing brood, with new frames and foundation. Each colony will now go to work with its own brood rearing and nectar gathering.

If the bees are now quartered in old boxes or log gums, they should be transferred into modern hives with moveable frames during the first pronounced honey flow. The explanation of methods to be followed in transferring is too lengthy to include in this article and was given last week.

Examine all colonies to be sure the queen in each case is present and laying. If absent, or not laying as she should, replace her with a new queen. It is best to get rid of all black or hybrid queens, and to put in their places new queens obtained from a reliable breeder. Three-banded Italian queens are best.

Study your honey plants as the season advances. Note the abundance of those that produce honey and the territory they cover, as well as the time of year they produce. This will not benefit you much this season, but will help you next year, in preparing your bees to take advantage of the best honey flows during the producing months.

The Subscription Manager Says:—

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IN SENDING check or money order to any company, always make same payable to the company.

No matter if you have corresponded with some individual member of the firm and he be an official of the company, don't make your check or money order payable to him, but make it payable to the firm.

This saves delay. It also saves a good deal of trouble and inconvenience. If you make your check payable to an individual and he happens to be away from the office on account of sickness or something for a few days, it holds up the entering of your order.

So let's all make it a rule to be strictly business in our affairs.

Jos. L. Mogford

Manager Subscription Department.

FARMERS are becoming aware of the fact that putting farming on a sound business basis is up to them, and that by organization they can reduce cost of production.—Secretary Wallace.

Get the Big Yield

FROM the first day those tender corn plants push through the soil into sight, you look anxiously down the corn row and picture in your mind's eye the harvest beyond. What that harvest will be depends much on your cultivator and how you use it. Do you like to use it? Is it easily controlled?

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Long ago our McCormick-Deering cultivators went through the experimental stage. As worth-while improvements were discovered they were adopted. Today, wherever you go, you hear them praised for their good work; their easy operation; their convenient adjustments; and the comfort they provide the user.

You should go to the store of the McCormick-Deering dealer and look them over. Samples are set up there for you. Climb into the seats, shift the pedals, handle the levers. Then let the dealer quote you the low prices. You will quickly agree that these popular cultivators give real value for the money, and these are days when real value counts big.

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Merely apply to plant beds and fields—after plowing—at the rate of 150 to 300 lbs. per acre. Mix with your regular fertilizer or broadcast by hand, grain drill, fertilizer or lime broadcaster.

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Inoc-Sul is sold by progressive dealers. If your dealer will not supply you, *we will.*

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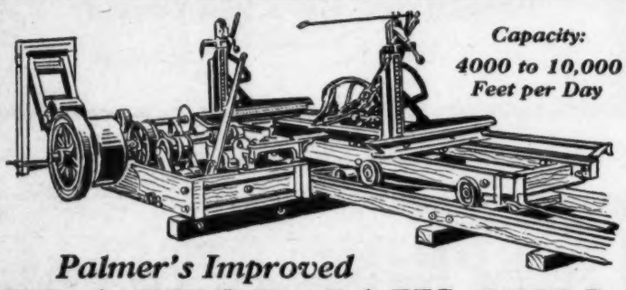

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Notice the heavy balance wheel, which adds greatly to the capacity of the mill when light power is used.

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Cow Testing Associations

And Their Value to the Farmer

A COW testing association is an organization of a group of farmers for the purpose of increasing the production and profits of their herds. These farmers hire a tester who visits each farm once a month. The tester weighs the morning and night milkings, tests it for butterfat and multiplies the amount of fat and milk of each cow by the number of days in the month. These records are not recognized by the Advanced Registry Associations but they will show each dairyman the production of each cow in his herd. By a large number of experiments it was shown that cow testing association records were accurate within 2 to 3 per cent, which is close enough for all practical purposes.

These records allow a farmer to compare the cost of feeding each cow with the value of milk and butter she produces and shows him what cows are making a profit and what cows are not paying for their feed. They, also allow the farmer to feed each cow according to her production and not to feed every cow in the herd the same amount of feed as is a very common practice.

Feed Good Producer Liberally

THE results of liberal feeding to the good producer is made very evident by some figures put out by the United States Department of Agriculture, after going over the records of several thousand cows for a few years. They found that from the lowest producing group of cows to the highest producing group each increase of 50 pounds in annual butterfat production was accompanied by an increase of about $16 income over cost of feed. The more fat produced the bigger this income.

This is due to the fact that a dairy cow is most profitable when worked to full capacity. If a cow is fed a full ration and kept out of bad weather she uses about half of it for body maintenance and the other half for milk production. If fed only three-fourths of the amount she requires she will use only one-third of the feed of milk production. If fed only one-half the amount she requires she will produce a small amount of milk, drawing on her reserve body fat which will cause her to lose flesh and finally go dry.

In feeding cows for Advanced Registry records there is danger of overfeeding and in this case economical production is again lost as the cow stores up the excess feed as body fat. There is little danger of over feeding the good producer under average farm conditions. The danger if of overfeeding the low producer that gives no profit. It can be safely stated that in practically all cases maximum production is economical production.

Rule

A GOOD rule to follow is to feed one pound of a grain mixture to every three to four pounds of milk produced, depending on the per cent of butterfat in the milk. Feed about three pounds silage for every 100 pounds live weight and as much hay as she will clean up. If on good pasture the amount of grain can be materially reduced.

If a good tester is employed he can assist in balancing the ration, which also is essential to economical production. He can assist the farmers in their management problems and in the organization of farmers for buying and selling collectively,

Two year's work of the Wilson County Cow Testing Association in Tennessee show the following results: The first year 228 cows completed a full year's test with an average production of 188 pounds of butterfat and $58.63 net profit per cow. During the second year 202 cows completed a full year's test with an average production of 256 pounds of butterfat and $98.80 net profit per cow. This showed an increase of 68 pounds of butterfat in average production and $40.17 net profit per cow.

The 202 cows on test gave the members of the association an increase profit of $8,114,34 over the previous year. Most of the cows on test the second year were the same that were tested the first year so the increased profits were due almost entirely to better feeding and care, suggested by the tester.

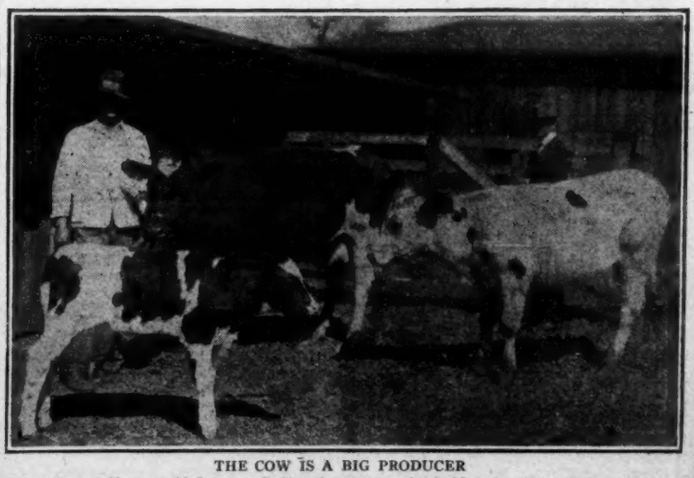
College Dairy Improves Its Cows

THE cow, heifer, and calf in the accompanying picture, are from the herd of the dairy of the Alabama Technical Institute and College for Women at Montevallo. The cow, without any special feeding, and being milked only twice daily, produced in 10 months, in 1922, 11,631.5 pounds of milk. Beginning March 15, 1923, and continuing for seven consecutive days, she produced 669 pounds of milk and 22.7 pounds of butter, an average of 95.57 pounds of milk and 3.25 pounds of butter daily.

The dairy is also used as a laboratory for an excellent elective course in dairying. This is a very popular study with many girls and women during the summer school.

The college urges farmers to have only the best milk cows, as it costs no more to feed a good one than a scrub.

T. W. PALMER.



THE COW IS A BIG PRODUCER

Cow—Knapp Hengerveld Johanna DeKol No. 454238—calved May 7, 1918. Heifer—Montevallo Pontiac Johanna DeKol No. 785273—calved January 15, 1922. Calf—Montevallo King Pontiac DeKol—calved February 11, 1823. Owned by the Alabama Girls' Technical Institute and College for Women.

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The jacket is designed with tuxedo front, cuffs and sash belt of brushed yarn. Has set-in sleeves and serviceable pockets. Cut full. Unlined.

The skirt has elastic waistband and two patch pockets. Cut full and roomy.

This suit can be worn for all occasions. Our price is ridiculously low.

COLORS: Heather blue, gray or brown. Sizes to fit misses 14, 16, 18 yrs; women, 32 to 44 bust.

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Our Health Talk

By B. E. Washburn, M.D.

Mosquitoes and Malaria

THE germ which causes malaria lives in the blood of human beings or in the stomachs of mosquitoes. The disease is spread by one particular kind or mosquito, the *anopheles*, and in no other way; it is never contracted from bad air or food, and only from mosquitoes which have bitten some other person who has malaria.

The prevention of malaria lies in the ridding of a community of mosquitoes or in curing all cases of the disease. Mosquitoes breed only in stagnant water and these breeding places can be destroyed by drainage or, if this is impracticable, by pouring oil on the standing water once a week.

Mosquitoes, as a rule, do not fly far from their breeding places; so control is usually a question of the efforts of the individual householder. When mosquitoes are numerous in a rural home, the premises should be examined carefully for accumulations of water in empty cans, choked gutters, broken bottles, or an unscreened cistern. The spring cleaning should always include the removal of cans, bottles, barrels, marsh weeds, and tall grass from near the house. Every pool of standing water should be drained or filled or oiled.

In some localities the breeding places of mosquitoes cannot be destroyed and screening must be employed to protect against malaria. Galvanized iron screen of not less than 18 strands to the inch should be used. In places where malaria exists the year round, quinine should be used during the mosquito season in connection with other preventive measures.

Rules for Preventing Malaria

REMOVE all cans, bottles, buckets, and barrels which are likely to collect water.

2. Drain or fill every pond or pool of stagnant water; oil places which cannot be drained.

3. Screen the house, especially the bed-rooms, and keep the screen doors closed. Galvanized iron screen of 18 strands to the inch should be used.

4. Keep mosquitoes away from persons having chills and fever or they will carry the disease to others.

5. Begin early in the spring and continue the preventive measures during the mosquito season.

Soy Beans With Corn Good

TESTS at the Ohio State University comparing corn and soy beans with corn alone strongly favor the corn-and-soy bean combination. Growing the two crops together has reduced the yield of corn six bushels to the acre, but 8½ bushels of soy beans have been produced instead, so that the feeding value of the mixture was considerably higher than that of the corn alone.

For silage, the mixture has produced as an average for three years, three tons more silage than corn alone, and 1,625 pounds more dry material.

These tests indicate that drilling the corn and beans is better than checking them. No difficulty has been found in harvesting the combined crops with a binder, and there has been little trouble in cultivating them.—C. J. Willard, Ohio State University.

TURNIPS are too often sowed broadcast. At this time of the year it is almost necessary that they be sowed in drills and kept clean by frequent cultivation. Sow one-half ounce to 100 feet and thin to four to six inches apart. The White Milan, Purple Top Milan, and Snowball are early varieties. The Purple Top Globe is a favorite with many. The best table turnip is the Yellow Aberdeen. For greens, sow the Seven Top or Southern Prize.

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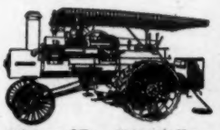
SAVE *money* with the Thresher by doing your own work just when grain is right; SAVE *grain* because it's the old reliable Russell—the world's best for getting out the grain. Do community threshing too.

Russell Giant 30-60. Like the 15-30 and 20-40 it burns kerosene, gasoline or distillate.

Made in seven sizes. Steel or Wood construction. From the 18 x 34 for individual farm and community use, to the big 36 x 60; all alike in design and proven good features.



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You can depend on the man who advertises. He *knows* his product is good.

That's one reason why it pays to read the advertisements you find in this paper. It is through advertising that you are able to keep in touch with the *good* things that progressive business men are spending their money to introduce and to keep before you.

Base your judgment on the Advertisements

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RED DEVIL LYE
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One to two tablespoonfuls softens a tub of hard water, making it like rain-water.

Red Devil Lye—convenient to use

There's no inconvenience about using Red Devil Lye. It is put up in granulated form, the modern way to make lye. The can has an air-tight sifter top, which is opened quickly and closed easily. The tight-fitting cap keeps the contents fresh and dry.

Red Devil Lye, being granulated, dissolves almost instantly in hot or cold water. It is economical to use because you can measure just the quantity you need, and there is no danger of using too much. Don't be put off with out-of-date, unknown and wasteful brands. Insist upon genuine Red Devil—the lye that's easy to use.

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Tuberculosis of Animals

May Be Transmitted To Children

By H. GRAFKE

WHILE working on meat inspection at Fort Worth, Texas, several years ago, I found 90 out of a shipment of 125 hogs affected with tuberculosis. Thirty animals were condemned as unfit for food. Upon investigation it was found that this lot of hogs was fattened in a feed lot with tuberculous cattle fed on grain. The hogs contracted the disease from feeding on the grain dropped from the cattle.

Many cattle breeders, more especially in the heavy populated North ern States, have been forced out of the business, due to finding 50 to 90 per cent of their cattle tubercular.

A careful investigation by government and state veterinarians throughout the country indicates that a large percentage of dairy herds contain one or more tubercular cattle, and this is a very important matter concerning the public health, for there are any number of cases to report where children have contracted tuberculosis from drinking infected milk from milk cows, and where this fact is brought to one's mind, it should not pass, with the erroneous idea that such cases are confined to dairies near large cities. There are numbers of cases to report where owners having one or more cows, are selling their surplus milk, and testing of these small herds reveals spreaders of tuberculosis, while the animals, from general appearance, are perfectly healthy.

Sorrow Could Not Bring Back Health

AN INTERESTING case was reported which every person drinking milk should give careful consideration, as similar conditions may affect a member of their immediate family. A family had two milk cows and obtaining more milk than they could use, made application for tuberculin test. Upon testing the animals both reacted to the tuberculin test. The lady began to cry and told the veterinarian that it was not the loss of the two cows that caused her grief, but the fact that their small child, whose only food was milk from these two cows, was recently operated upon for tuberculosis of the bone, and was at that moment lying in a plaster cast and would probably be an invalid for life. Similar cases of a very pathetic nature could be mentioned but the one mentioned above is a fair example of a number reported to the state and federal authorities engaged in tuberculosis eradication.

It is estimated by veterinarians giving this work their special attention that fully 5 per cent of cattle found tubercular upon testing, are spreaders of the disease. Only a few days ago I witnessed the slaughter of a reacting animal from a dairy. The animal from general appearance was in good condition; the coat of hair was good. Extensive lesions of tubercular abscesses were found in the lungs and undoubtedly the animal was a spreader of the disease, typical of many cases in the following way: Cattle affected with tuberculosis of the lungs cough up matter the same as a human affected with the disease, but cattle do not expectorate. Instead, they swallow the affected matter, and the disease germs pass through the body, and the manure of the animal contains millions of the disease germs. The udders of several milk animals of a herd will pick up small particles of manure and to anyone who is familiar with milking cows, it will be easy to understand how small particles of the dirt of the cow-pen will find their way into the milk pail. Milk is not strictly sanitary at the very best. It can be safely stated that more children can be affected with tuberculosis from drinking cow's milk than is commonly supposed. As a rule, only the most severe cases are detected.

How the Disease Is Spread

ANIMALS affected with tuberculosis of the lungs will cough when drinking and eating out of open troughs or feed racks, dropping some of the affected matter in the water or feed, resulting in other cattle drinking or eating the affected material. Quite recently an animal from a dairy herd in this State was found tubercular upon testing and when slaughtered under Government supervision was found to be badly affected with tuberculosis in the lungs and udder. There was once chronic open wound on the animal's side, which was also found to be tubercular. This animal was undoubtedly spreading tuberculosis by coughing into feed and water, spreading disease germs through the manure, through the diseased milk and through the discharge from the open wound. This animal was a typical spreader of tuberculosis to cattle and humans. There are a great many family milk cows which are raised on dairy farms and sold as surplus milk cows when fresh. If the dairy herd contained tubercular cattle, chances are many for this animal to have contracted the disease before sold for family use. She will remain a spreader of the disease to her offspring which are later used for family purposes, and also through the milk supply, and during several years time will be a spreader of the disease to cattle and people and never be suspected, due to the apparent health of the animal and reasonable sanitary precautions on the premises.

Eradication of Tuberculosis

TUBERCULOSIS can be eradicated through the application of the tuberculin tests, of which there are three methods, either of which will detect the disease when properly applied by competent veterinarians, but very uncertain when attempted by laymen and others inexperienced in veterinary practice. The three tests consists of the thermal, intradermic, and ophthalmic. The thermal test is made by injecting tuberculin testing material under the skin and noting a rise in temperature in the following day, comparing with the temperatures taken on the day before injection. The intradermic test is made by injecting tuberculin testing material into the layers of the skin, usually at the base of the tail, and noting reactions in the form of typical enlargements. The ophthalmic test is made by inserting a tuberculin testing tablet into the eye and allowing it to dissolve, and later noting discharge from the eye if the animal is tubercular. Occasionally animals fail to react to one of the tests and for this reason very often two of the tests are combined. Some animals will fail to react to one test, at the same time will react to the other. Tuberculin testing is absolutely harmless, causes no ill effects and animals do not react unless affected with the disease. Very often the animals react and lesions are so slight that the disease can only be detected by the use of a compound miscroscope. If such animals were allowed to remain in the herd, they would likely become spreaders of the disease within a very short time. The very slight lesions in such cases indicate the reliability of the tuberculin test.

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Strong Healthy Chicks that give satisfaction. From heavy layers. S. C. Barron English Whites, Browns, Anconas, 13c. We have Class A flocks. We sell no Class B, but Class A chicks, 100% live. 10% down. Postpaid. Ref. 2 banks. Catalog free. Order now.
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CHICKS Delivery guaranteed. Popular varieties. Pit Games and others. Write for catalog. For years our flocks have been selected and mated for high production. KENTUCKY HATCHERY, 332 W. 4th, Lexington, Ky.

CHICKS PEDIGREED, Strong and Vigorous, from 40 Breeds, Heavy layers. Exhibition and select grades. Postage PAID. Live arrival guaranteed. Our Hatcheries EAST AND WEST from which to ship. A month's feed FREE. Catalog free. Naheb Hatcheries, Box A3, Gambier, Ohio.

MILLER'S "The Old Reliable" Illinois Hatchery can supply you with good vigorous chicks from heavy laying flocks of leading varieties, postpaid. Don't buy chicks until you get our Big Free Catalog. Living prices. Bank reference.
The Miller Hatchery Box 33, Heyworth, Ill.

Chicks—Ducklings—And Hatching Eggs—From bred-to-lay stock; 12c up. Live delivery guaranteed. Poultry, Ducks, Geese, Turkeys, Bantams, Canaries, Pheasants. Brooders and Poultry Supplies. Seeds. Satisfied customers in 30 states. Write for catalog.
HEIDEL POULTRY FARMS, Dept. A. St. Louis, Mo.

PUREBRED POULTRY

MISCELLANEOUS BREEDS

EGGS — Leghorns, Rocks, Reds
$2.50 Per Sitting.
White Leghorns (Ferris Strain).
Barred Rocks (Thompson Strain).
Rhode Island Reds (Owens Strain).
Dr. E. A. Lambert, Denton, Ga.

Black Leghorns — S. C. R. I. Reds
BRED FOR EGGS AND BEAUTY
SUPERIOR QUALITY. WINTER LAYERS.
Write for Circular.
GEO. E. JOHNSON, 511 40th St., ENSLEY, ALA.

EGGS from the following breeds: White, Barred, Buff and Partridge Rocks, Silver Laced, Golden and White Wyandottes, Buff Orpingtons, Rhode Island Reds, Indian Games, White and Brown Leghorns. Delivered at the following prices: Single sittings at $1.50; two sittings, $2.75; 4 sittings, $5; 100 eggs, $8.
CALLOWAY POULTRY ASSOCIATION, Murray, Ky.

If you have a surplus of any kind of farm products, why let it go to waste? Put a small ad in The Progressive Farmer and dispose of it at a profit.

The Poultry Yard

By F. J. ROTHPLETZ

Caponizing Surplus Cockerels

EXCEPT such cockerels as are marketed when they reach broiler age, (the ordinary poor feeding methods seldom bring them to proper broiler size—weight), the surplus males in any flock, if allowed to grow to full maturity, usually prove a nuisance in the chicken yard, and even if yarded apart from hens and other males, make an inferior quality of poultry meat and bring correspondingly inferior prices.

MR. ROTHPLETZ

The proper thing to do is, as soon as the sex of the young fowls can be determined, cull the males, retaining for future breeders only the best, and rejecting all those inferior in shape, color, or possessing disqualifying defects, those lacking in virility and health. All these should be caponized, emasculated.

The operation is so simple that after a little practice even young boys are successful at it, and even if by accident an artery is cut, causing the bird to bleed to death, it is no loss, as it is just as good for table use as any other broiler.

Capons should be yarded by themselves and fed mainly for growth of frame until 8 to 10 months or more. Their development, according to extended tests at some experiment stations, is not much greater than that of cockerels until they are six to seven months old, but after that, they rapidly outgrow cockerels in size and weight.

Almost all makers of caponizing instruments issue pamphlets giving detailed instructions for performing the operation, and some, we believe, also furnish lists of breeders and dealers in capons. The cost of the caponizing sets is, we think, from about $2.50 to $5.

Capons are "in season" mostly after the Christmas holiday season is over, as during that time the lordly turkey and the fat goose are the fashion. But from late February until probably April 15, capons are at their best and in highest demand, prices generally running as high as those for fancy broilers.

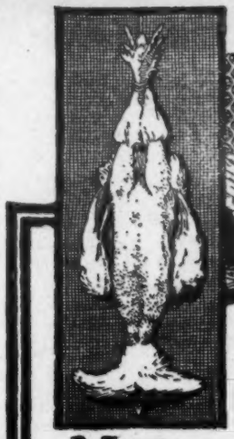
* * *

As soon as the last batch of eggs has been put into the incubator, or trusted to Biddy to hatch, the usefulness of the "head of the flock," for this season at least, is ended. Such pullets or hens as are reserved for summer layers can well dispense with his attentions, as infertile eggs are better, and keep better than the fertile ones. The observations of the majority of breeders also show that the layers, kept by themselves and relieved of the presence of males, lay just as well or even better.

It follows that a segregation of all males should be made as soon as the breeding season is over. Those getting too old for effective service, or developing undesirable points, should be cooped for two weeks, fed on soft fattening feeds, and eaten or sold.

The reserve males should be put in runs well separated from the hens, obtaining a period of profitable rest until the opening of the fall breeding season.

EIGHT or ten pinches of sodium fluoride powder dusted over the head and body is a very good remedy for lice on poultry. Try it and get more eggs.



EARLY BROILERS
November Layers

Make it ten weeks from peeps to broilers—two-pounders.

Do it this way:
Keep them healthy.
Keep them hungry.
Feed the old reliable

Dr. Hess Poultry

PAN-A-CE-A

I spent 30 years in perfecting Pan-a-ce-a.
GILBERT HESS M.D., D.V.S.

Never mind about indigestion, diarrhea, leg weakness and gapes. Pan-a-ce-a takes care of all that. There will be wellness, cheer and good growth.

PAN-A-CE-A your chicks—then put them on the scales at ten weeks, set her at two pounds, and watch that beam come up!

You will see a mighty difference in the feather growth, too, between your flock and a non-Pan-a-ce-a flock.

Pan-a-ce-a will develop your pullets into early henhood—fall and winter layers.

Tell your dealer how many hens you have. There's a right-size package for every flock.

100 hens, the 12-lb. pkg. 200 hens, the 25-lb. pail
60 hens, the 5-lb. pkg. 500 hens, the 100-lb. drum
For fewer hens, there is a smaller package.

GUARANTEED

DR. HESS & CLARK Ashland, O.

Dr. Hess Instant Louse Killer Kills Lice

PUREBRED BABY CHICKS

LOOK! LOOK!!
Chicks and Eggs!

44 Breeds. Big Special Sale on in Hatching Eggs. All orders shipped direct from this up-to-the-minute plant. We have most all grades—from selected utility up to 'egg contest and great prize winners. No waiting when you order here. Specialists in rare breeds.

Beautiful Catalog and Special Prices Free

FLEMING BROS. 18K YARDS
DEPT. O SHELBYVILLE, ILLINOIS

Baby Chicks

Hatching every day in the week and every hour in the day. We are the World's largest producers.

Three Million for 1923

Twelve popular breeds of best purebred stock obtainable, moderately priced; also QUALITY chicks from heavy laying stock at small additional cost

SMITH'S STANDARD Reg. U. S. Patent Office.

We deliver by Parcel Post anywhere East of the Rockies, and guarantee 95 per cent safe arrival.

Write nearest address today for Catalog—Free.

The Smith Standard Company,

Boston, Mass., Dept. 81, 184 Friend Street.
Philadelphia, Pa., Dept. 81, 823 Locust Street
Cleveland Ohio, 1901 West 74th Street
Chicago, Illinois, Dept. 81, 427 So. Dearborn St.
(Member International Baby Chick Association)

Baby Chicks

20 varieties, 50,000 weekly. From Hogan tested flocks bred for heavy, egg producing. Miller Baby Chicks are shipped to you safely by parcel post. Safe delivery guaranteed. Order from this well established, reliable firm. Write for free catalog.
MILLER POULTRY FARMS
Box 510 Lancaster, Mo.

YOUNG & HILLVIEW 282-EGG STRAIN S. C. WHITE LEGHORNS—Eggs, $1.50 per 15; $7.50 per 100. Baby Chicks, $15 per 100. Select Stock for sale at reasonable prices at all times. Write for mating list.
THE PEACH WHITE LEGHORN FARM,
Box 171. Lyndhurst, Tenn.

— JERSEY BLACK GIANTS —

THE DUAL PURPOSE FOWL

Hatching Eggs—$25 per 100; $15 per 50; $7 per 25.
Baby Chicks—$30 per 100; $17 per 50; $14 per 25.

Write for descriptive circular and general information about JERSEY BLACK GIANTS.

PEDRICK POULTRY FARMS,
Flemington, New Jersey.

SUPERIOR CHICKS

We hatch Leading Varieties Standard Bred, vigorous, heavy laying stock. Postage paid. Live arrival guaranteed. Lowest prices. Best quality. Prompt deliveries. Send for our large, illustrated catalog. Superior Poultry Co., Box S-13 Windsor, Mo.

STURDY BABY CHICKS

The raisable kind. BARRED ROCKS, REDS, WHITE WYANDOTTES. From high-grade, heavy producing strains. Circular Free.
THE KNOXVILLE HATCHERY,
Box P, Knoxville, Tenn.

CHICKS 7c Up

Strictly Purebred Chicks. All kinds. Postpaid. Real delivery service. Guaranteed. Catalog Free.
Member Mid-West Baby Chick Association.
COLONIAL HATCHERIES Box P, Windsor, Mo.

WHITE LEGHORN BABY CHICKS—World's Greatest Layers—Highest grade chicks guaranteed. Also Anconas, Rocks, Reds. Minorcas. 95 per cent live delivery, free. Our 16th year. Instructive catalog.
SINGLE POULTRY FARM, Martinsville, Tenn.

Business Hints for Farmers

Don'ts for Dairy Farmers

DON'T forget to wipe the cow's udder and flanks before milking.

Don't milk with wet hands.

Don't run cold milk through the separator.

Don't forget to cool the cream immediately after separation is completed.

Don't mix warm and cool cream.

Don't put milk or cream into dirty vessels.

Don't forget to wash the separator after each separation.

Don't separate the milk without first straining it.

Don't fail to operate the separator according to directions.

Don't expect the cream can to reach destination unless it is plainly addressed.

Don't feed dusty hay or ill-smelling feeds just before milking.

Don't skim too thin cream.

Don't expect to get top price for cream unless cows, stable, utensils, separator, and milkers are kept clean.

Don't forget that there is good money in dairying if it is properly done.—C. G. Cushman, Extension Dairy Specialist, Clemson College.

Business Methods Make Profits in Dairy Game

THE trouble with the dairy business lies mostly with the methods of the men in the business. Some dairymen prosper while their neighbors fall by the wayside. The dairy business is all right, but it takes good business methods to make profits, says M. H. Keeny, dairy specialist of the New Jersey College of Agriculture.

Know your cow, he says. Good dairymen know what their cows are doing. They keep milk records, weed out the unprofitable cows, raise heifer calves from the best cows and thereby improve their herds. You can't guess at these things and get ahead. It takes records to get the facts.

Feed Your Cow Well.—Good dairymen are good feeders. They feed balanced rations and according to production. They have silos, alfalfa, clover or other hay, and feed liberally of grain.

Use Only Purebred Bulls.—All of our best dairymen use purebred bulls because they know it pays. A good bull will remake a poor herd into a good one, but a poor bull will ruin any herd and may put his owner in the poorhouse. A good bull is the best investment any dairyman can make. You never have and never will see a man succeed with scrubs. It takes good cows to make money and the bull is the main factor in getting better cows. Good dairymen observe all of these things and apply them in their business. They will make money in 1923.—New Jersey Extension Service.

Reinstatement and Conversion of War Risk Insurance

HAVE you dropped your War Risk Insurance? Can you afford to? Think it over.

2. It requires only a little of your time, effort, and money to reinstate your insurance.

3. The Veteran's Bureau knows all about it, will furnish all necessary forms and take care of all the details—do all the work.

4. You can reinstate your insurance in any amount, in multiples of $500, from $1,000 to $10,000.

5. If you dropped your insurance more than three months ago, you must be re-examined.

6. This examination will not cost you anything at the Veteran's Bureau.

7. It takes very little cash money to reinstate. If in good health you need pay only the premium for the month in which you dropped out, and the premium for the month in which you reinstate.

8. Under the law all war risk or term insurance expires March 3, 1926.

9. Therefore, you must convert your war risk insurance into one of six forms of permanent Government Insurance before that date.

10. Permanent Government Insurance is the cheapest and best in the world, because Uncle Sam stands back of it.

11. Government Insurance can be had in six forms—Ordinary Life; Twenty and Thirty Pay: Twenty and Thirty Year Endowment; and Endowment at age of Sixty-two. Government Insurance (converted) makes no restrictions as to occupation or travel.

Government Insurance carries a disability clause. You don't have to die to get the money; in case of total permanent disability you will draw $5.75 per month for each $1,000 insurance you carry as long as you live and remain in that condition.

Government insurance provides liberal loan and cash values and makes it impossible for you to lose.

Government Insurance earns liberal dividends—offers all the advantages of the big life insurance companies and more, at less cost to you.

Government Insurance premiums can be paid monthly, quarterly, semi-annually, or annually.

12. Government Insurance is the only life insurance available for a disabled man. If you don't think so try it.

13. The Veteran's Bureau is anxious to see that all ex-service men carry Government Life Insurance, and stands ready and willing to help in every way, looking to that end.

Call in person or write to the Subdistrict Manager, United States Veterans' Bureau, Birmingham, Alabama, or to any other office of the United States Veterans' Bureau.

Coming Livestock Sales

April 18.—Law and Roberts Hereford Company, Jane Lew, W. Va.

April 19.—West Virginia Hereford Breeders' Association, Clarksville, W. Va. V. V. Law, manager.

April 27.—Buckland Hall Farms—Shorthorn Sale, Nokesville, Va.

May 5.—Aberdeen-Angus Sale, W. B. and A. C. Davis, Fort Payne, Ala.

May 8.—South Carolina State Guernsey Sale, Columbia, S. C. C. T. Rice, Oakton, Va., manager.

May 18.—Guernsey Consignment Sale, Timonium, Md. Louis Merryman, Cockeysville, Md., manager.

May 23.—Aberdeen-Angus Dispersion Sale, Muskogee, Okla. J. C. Simpson, owner; L. R. Kershaw, manager.

Farmers' Exchange

(5 Cents a Word, Cash With Order)
Each Initial, Number or Amount Counts as a Word
Always address THE PROGRESSIVE FARMER, Birmingham, Ala.

The above rate applies to the Georgia-Alabama Edition—85,000 Circulation. State plainly what edition you wish to use.

LIVESTOCK

DUROC-JERSEYS

Bargains in Fine Durocs. Beechcroft Farm, Bellbuckle, Tenn.

HAMPSHIRES

Write for Hampshire Booklet and Low Prices. Hall Farm, Soperton, Ga.

Registered Hampshire Hogs — Lookout breeding. George E. Davis, Newbern, Tenn.

POLAND-CHINAS

Registered Poland-China Bred Gilts and Pigs. McMahan Bros., Sevierville, Tenn.

Spotted Poland-Chinas — Satisfaction guaranteed. Mortons Hog Farm, Russellville, Ky.

Poland-Chinas—The big, smooth, mellow, easy feeding kind. P. W. Clarke, Route 6, Columbia, Tenn.

For Sale or Exchange—Poland-China Male—Bred in Nebraska. Satisfaction guaranteed. M. R. Hays, Scottsboro, Ala.

ABERDEEN-ANGUS

Angus Cattle—The herd where champion blood lines predominate. Special inducements for spring bull trade. Sanford & Rich, Mocksville, N. C.

Auction Sale of 50 Head of Purebred Aberdeen-Angus Cows, Heifers and Bulls—Saturday, May 5th—From one of the best herds in the South. Terms, one-third cash, balance in 6 or 12 months. At Fort Payne, Alabama. W. B. & A. C. Davis.

GUERNSEYS

Guernsey Bulls for Sale. George Dampbell, North Manchester, Indiana.

JERSEYS

Big Bargain: 70 Dairy cows and high-grade Jersey heifers. Geo. W. Thomas, Marion, Ala.

TWO OR MORE BREEDS

For Highly Bred Holstein or Guernsey Calves—Write L. Terwilliger, Route 1, Wauwatosa, Wisconsin.

PET STOCK

DOGS

For Sale—Registered White Collie Pups. Mrs. Janie Eiland, Sprott, Ala.

Sable and White Collie Pups—From registered stock. M. I. Upchurch, Gordo, Ala.

High-class, Coon, Opossum, Rabbit Hounds—Puppies. Satisfaction guaranteed. Remer McMillan, Clermont, Georgia.

Free to Dog Owners—Polk Miller's Famous Dog Book—64 pages on care, feeding, training, with ailment chart and Senator Vest's celebrated "Tribute to a Dog," etc. Also full list Sergeant's dog medicines, the standard for 44 years. Just send your name and address. Our free advice department will answer any question about your dog's health free. Polk Miller Drug Co., Inc., 117 Governor St., Richmond, Va.

POULTRY AND EGGS

ANCONAS

Ancona Eggs (Sheppard Strain) — Guaranteed to hatch. $1.50 for 15; $8 per 100. Harrison Poultry Farm, Gallion, Alabama.

Sheppard's Famous S. C. Anconas—Tested layers. 15 Eggs, $2, postpaid. Red Arrow Rabbitry, Poultry Dept., Box 1393, Mobile, Ala.

S. C. Anconas (Sheppard Strain)—Baby chicks only. Live delivery guaranteed. $17 100; 20c each, less than 100. Lee Poultry Farm, Anniston, Ala.

ANDALUSIANS

Blue Andalusian Eggs—$3 for 15. Fenton Shirley, Fayette, Ala.

GAMES

Irish Black Breasted Red Game—15 Eggs, $3; parcel post. Walter Lester, Columbiana, Ala.

JERSEY BLACK GIANTS

Jersey Giants—Summer reduced price. Giant Farm, Breaux Bridge, La.

LEGHORNS

Ferris-Young S. C. White Leghorn Eggs—$6 per 100 up. J. G. Oldham, Route 1, Madisonville, Ky.

S. C. White Leghorns—Pen eggs, 15, $2.50; utility, 15, $1.25; 100, $5. R. L. Goldsmith, Atmore, Ala.

Beautiful Single Comb Buff Leghorns—15 Eggs, $1.50, postpaid. Buff Leghorn Farm, Letcher, Ala.

Pure Tom Barron White Leghorns—17 Eggs, $1.50; 100, $6. George B. Davis, Newbern, Tenn.

S. C. Dark Brown Leghorn Eggs (Everlay Strain)—15, $1.10; 100, $6.50, postpaid. W. M. Ponder, Tifton, Georgia.

White Leghorns (Young Strain)—Bred to lay. 15 Eggs, $1.50; 100, $8. Postpaid. R. M. Clay, Woodville, Ala.

For Sale—S. C. Brown Leghorns (Tormohlen Strain) —World's record layers. Eggs, 15, $1.25; 30, $2.25, postpaid. M. W. Allen, Riental, Miss.

Ferris S. C. White Leghorns—Eggs, $1.50 and $2.50 per sitting; $8 and $11 per 100. Chicks, $18 and $22 per 100. F. Gordon Comer, Anniston, Ala.

Kerlin's Strain S. C. White Leghorn Hens—One year old, $2 each. No better layers in the South. State Secondary Agricultural School, Albertville, Ala.

For Sale—Year-old Ferris Strain White Leghorn Pullets—Now laying; $24 per dozen; $180 per 100. Manning Bros. Poultry Farm, Valley Head, Ala.

S. C. White Leghorn Eggs (Ferris 200 to 265-Egg Strain)—$1.50 for 15; special prices on lots. Cockerels and cocks, $3 to $5. Cedar Creek Poultry Farm, Charing, Georgia.

Hatching Eggs and Baby Chicks—From highest egg producing, trapnested, S. C. White Leghorns, at lowest prices. Circular upon request. The Freiwald Farm, Box 753, Foley, Ala.

Hatching Eggs—From selected, Hogan tested, purebred, heavy laying S. C. White Leghorn pens, headed by Ferris 263-300-egg strain cockerels. 15, $1.50, postpaid. W. J. Hagood, Route 1, Town Creek, Ala.

MINORCAS

Selected S. C. Black Minorca Eggs—$3; 2 sittings, $5; $10 per 100, delivered. J. W. Bailey, A. & M. College, Miss.

ORPINGTONS

Purebred S. C. Buff Orpingtons—Eggs, $1.50 per 15, postpaid. Mrs. Idell Cotton, Lexington, Ala.

Am Selling My White Orpingtons—Winners at Chattanooga Fair, 1922. Write wants. Mating list free. Alabama Orpington Farm, Scottsboro, Ala.

PLYMOUTH ROCKS

For Best Partridge Rocks—Write Mack Marshall, Sevierville, Tenn.

Fine Strains Barred Rock Eggs—$1.50 sitting. Mrs. H. L. Quarles, Tyler, Ala.

Buff Rocks—Standard bred. Eggs, pens, $3 15; range, $2 15; $8 per 100. Fred King, Winchester, Tenn.

Gardner's Barred Plymouth Rocks—Sure winners and heavy layers. Stock and eggs. Gardner Bros., Auburn, Ala.

$1.25 Per 15 Eggs—Beautifully Barred Ringlets—Great layers. Large business permits low price. Satisfaction guaranteed. Beechcroft Farm, Bellbuckle, Tennessee.

RHODE ISLAND REDS

Mrs. Iva Anderson, Glennville, Ga.—Prize Winning Rhode Island Reds—Chicks (Donaldson strain), $4.25 per 25. Eggs, $1.25 per 15.

Reds (Fancy)—Cocks heading pens from $25 sitting (Owens Farm) eggs. Eggs, select, first pen, $4; second, $3; utility, $2 sitting; delivered. C. Denton, Hartselle, Ala.

S. C. Rhode Island Reds—Eggs for hatching. Owen Farms strain. Four awards at Gulf Coast Fair. Fine type, deep color, tested layers. $3 and $5 per 15. Mobile Red Farm, 1906 Old Government Street, Mobile, Ala.

Grassland's Pen of S. C. Reds—Have led all Reds at Tri-State laying contest during January, February. 17 beautiful even colored show winners in 8 well mated pens. Eggs, $3.50 per 15, delivered. Mating list free. Grassland Stock Farm, Strongs, Miss.

RHODE ISLAND WHITES

Rhode Island White, Rose Comb (Viking Strain)—The world's great layers. Eggs, $2.50 for 15. Cockerels, $5 each. M. A. Maret, Douglassville, Ga.

WYANDOTTES

Silver Wyandottes—Stock, $2. Eggs, $1.50 sitting. Dr. Wood, Steens, Miss.

Standard White Wyandottes—Eggs and Stock—Catalog free. Jas. Harris, Pelham, Ga.

$1.40 Per 15 Eggs—Pure White Wyandottes—Large, beautiful, heavy layers. Large business permits low price. Beechcroft Farm, Bellbuckle, Tenn.

BABY CHICKS

S. C. Black Minorca Chicks—Eggs for hatching. Purebred. M. M. Hobson, Orlando, Fla.

Ancona Eggs, Chicks—Direct Sheppard strain. Write for price list. Maude F. Long, Cedar Hill, Tenn.

Baby Chicks — 8c up. 12 varieties. Best laying strains. Catalog free. Missouri Chickerias, Clinton, Missouri.

Ancona Babies—Hogan tested flock, quality chicks. Hatching eggs. Send for circular. S. C. Ancona Farm, Lincoln, Illinois, Route 6.

Baby Chicks—Purebred S. C. White Leghorns, Reds and Rocks—The kind that lay. Write for catalog. Bridgewater Poultry Farm, Bridgewater, Va.

Baby Chicks—White Leghorns, White Rocks, White Wyandottes and Rhode Island Reds—Catalog on request. Walnut Hill Poultry Farm, Box 91P, Gadsden, Alabama.

Highly Bred Silver Wyandotte Chicks—20c each. Hatches April 13th-26th. Some good hens, breeders this season, $2 each. Mrs. T. A. McKay, Chandler Springs, Ala.

Baby Chicks—We sell baby chicks by the hundred or thousands. 15 varieties; purebred, heavy laying strains. Write for beautiful illustrated catalog and 1923 price list. The Owenton Hatchery, Box 1495, Birmingham, Alabama.

Baby Chicks—20 varieties; 50,000 weekly. From Hogan tested flocks. Miller baby chicks are shipped via prepaid parcel post. Safe delivery guaranteed. Over 10,000 pleased customers. 20th season. Big catalog free. Miller Poultry Farms, Box 600, Lancaster, Missouri.

DUCKS

Horton's Indian Runner Duck Eggs—For hatching. Sylvan View Poultry Farm, Curryville, Mo.

TURKEYS

Purebred Buff Turkey Eggs—$4.50 dozen. Mrs. Clell Bailey, Route 3, Gordo, Ala.

Mammoth White Turkey Eggs—$3.50 for 10. Mrs. Percy Webster, Winfield, Ala.

Fourteen Bronze Turkey Eggs for $10. Choicest quality. Send me your orders. Mrs. J. G. Sanderson, Houston, Miss.

Bourbon Turkey Eggs—Extra large, 2-year mated stock; $7.50 dozen. From choice free range flock, 50c each. Mrs. A. R. Sylvester, Comer, Ala.

Large Bronze Turkey Eggs—For Hatching—Prolific layers, as good as can be bought anywhere. $3 the dozen. Mrs. W. T. Stewman, Sylacauga, Ala., Rt. 3.

Eggs—From my Famous Prize-winning Bourbon Red Turkeys—$10 dozen, delivered. Our turkeys have never been defeated in the show room. "Blood will tell." Fertility guaranteed. Glad-Vee-Nell, Lavonia, Ga.

TWO OR MORE BREEDS

S. C. White Leghorns, White Orpingtons—$2 sitting; $10 100, prepaid. From prize winners. G. M. Moseley, Menlo, Ga.

Jersey Black Giant Eggs—$2.50 per sitting. Buff Orpington Rhode Island Reds and Whites, $1.25. Mrs. Lela Gardner, Fayette, Ala.

Eggs—Anconas (Sheppard Strain)—$1.25 per sitting of 15 White Leghorns (Young and Wyckoff Strains), $1.25 per sitting of 15. N. B. Patterson, Route 3, Arlton, Alabama.

SEEDS AND PLANTS

BEANS

O-Too-Tan Beans — At $7.50 per bushel. B. V. Coesens, Foley, Ala.

Hastings Mung Beans—5 lbs., $1, postpaid. Alden B. Darnell, Jasper, Ga.

Early Speckled Velvet Beans—$2 per bushel. Sound and nice. J. M. Glasscock, Jemison, Ala.

For Sale—O-Too-Tan Soy Beans—$7 per bushel; $2.50 per peck. W. F. Osburn, Tuscaloosa, Ala.

Mammoth Yellow Soy Beans—Grown especially for seed; $2 per bushel. W. S. Dudley, Lake Landing, North Carolina.

For Sale—Early Speckled Runner Velvet Seed Beans—In sound 2½-bushel bags; $1.75 bushel. Hall Farm, Soperton, Ga.

100-Day Velvet Beans—Makes lots of vines and beans. Best running bean grown. $1.50 per bushel. W. C. Wilson, Bartow, Ga.

Early Speckled and Osceola Velvet Beans—$2 per bushel. Mixed Peas, $2 per bushel. Choice seed. Burch Co., Chester, Ga.

Velvet Beans!—Early Speckled or 90-Day Velvet Beans—Now 2½-bushel bags; $1.50 per bushel. Cash with order. F. H. McCrae, Denmark, S. C.

For Sale — Cleaned Mammoth Yellow Seed Soy Beans—Any quantity, $1.50 per bushel. F. O. B. Washington, N. C.; cash with order. Talley & Baugham, Inc.

Selected Soy Bean Seed — Mammoth Yellow and Black—At $2.20 per bushel, F. O. B. Hertford. Check with order. Prompt delivery. Reed & Felton, Hertford, N. C.

For Sale—Select Recleaned Early Speckled Velvet Beans—Packed new 2-bushel bags, at $2 per bushel. F. O. B. cars, Atmore, Ala.; cash with order. H. W. Currie, Atmore, Ala.

Mammoth Yellow Soy Beans—$2.35 bu. O-Too-Tan soy beans, $6.50 bu. 90-Day Velvet beans, $1.85 bu. No orders accepted for less than 3 bushels; assorted. F. O. B. Atlanta, Ga. Address Georgia-Carolina Seed Co., Gaffney, S. C.

We Offer Remainder Stock Velvet Beans—In new, even weight, 2-bushel bags, $2 bushel, cash with order. F. O. B. Greenville. If you want sound seed, send us your order. At this price, stock will not last long. Beeland Bros. Mercantile Co., Greenville, Ala.

CABBAGE—COLLARD—ONION

Cabbage Plants—$1 1,000. Tomato and potato, $1.50 1,000. Catalog free. Clark Plant Co., Thomasville, Georgia.

Frostproof Cabbage Plants—Leading varieties; 250 postpaid, 50c; 500 postpaid, 75c. Walter Parks, Pisgah, N. C.

Frost Proof Cabbage Plants — Wakefield and Flat Dutch — 500, 75c; 1,000, $1.25; over 5,000, at $1. American Plant Co., Alma, Ga.

Spring Cabbage Plants—500, $1; 1,000, $1.50, postpaid. Potato Plants, $1.50 per 1,000, by express. Bonnie Plant Co., Union Springs, Ala.

Cabbage Plants—75c 1,000. Early Jersey, Wakefield and Succession. Millions. Can ship C. O. D., parcel post or express. W. W. Williams, Quitman, Ga.

Send No Money — Fifty Millions Cabbage, Potato, Onion, Tomato Plants—Shipped C. O. D., $1 1,000 and charges. Great Northern Exchange, Valdosta, Ga.

Fresh Cabbage and Collard Plants—Of leading varieties. Now ready for spring and summer shipments. Postpaid, 500, $1; collect, 1,000, $1. Thomasville Plant Co., Thomasville, Ga.

Frostproof Cabbage, Bermuda Onion Plants—Immediate shipment. Copenhagen Market and all varieties, 500, 60c; 1,000, $1; 5,000, $3.75. Delivery charges collect. Satisfaction guaranteed. Schroer Plant Farms, Valdosta, Ga.

POTATO—TOMATO—PEPPER—EGGPLANT

Porto Rico Plants—$2 per 1,000. Will thank you for some business. H. G. O'Neal, Gurley, Ala.

Porto Rico Potato Plants (Treated)—$1.25 1,000; 10,000 up, $1. Georgia Plant Farm, Baxley, Ga.

Potato, Tomato, Cabbage, Onion and Pepper Plants—Dirt cheap. Catalog. Sexton Plant Co., Valdosta, Georgia.

Porto Rico Potato—Tomatoes—500, $1; 1,000, $1.50. Cabbage, 1,000, $1.25. Kelcy Plant Farm, Bealey, Alabama.

Porto Rico Potatoes, Tomatoes—$1.50 1,000. Peppers, eggplants, 50c 100. Quality Plant Farm, Thomasville, Ga.

Farmers' Exchange

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Improved Porto Rico Potato Plants—$1 1,000. Evergreen Farms, Thomasville, Ga.

J. R. Batten, Winokur, Ga., Route 1—Porto Rico Potato Plants—$1.15 1,000, cash with order.

Porto Rico Potato—Tomato—500, $1; 1,000, $1.50; 5,000, $7. Cabbage, 1,000, $1.25. Jones Valley Farm, Birmingham, Ala.

Potato and Tomato Plants—Leading varieties, $1.25 per 1,000. Can ship a million per day. Jack's Plant Exchange, Valdosta, Ga.

Porto Rico Potato Plants for Sale—$1.35 1,000; 5,000 and up $1.20 1,000, fully guaranteed to be genuine. J. H. Brigman, Baxley, Ga.

Porto Rico, Nancy Hall Potatoes; Tomatoes — 500, $1; 1,000, $1.50. Peppers, eggplants, postpaid, 75c 100. Oakdale Farm, Birmingham, Ala.

Pure Porto Rico Potato Plants—Count and quality guaranteed. $1.25 per 1,000; 5,000, $1.18. Prompt shipment. J. H. Williams, Coffee, Ga.

Tomato, Pepper Plants—Early Acme and Stone; Bell pepper, 35c 100; 500, $1.25; 1,000, $2. Pepper, 50, 30c; 50c 100. Doyle Knight, Dublin, Ga.

Improved Porto Rico Potato Plants — April, May, June delivery. 1,000, $1.15; over 10,000 at $1.25. Cash with orders. American Plant Co., Alma, Ga.

Brannen Plant Co., Baxley, Ga.—Porto Rico Potato Plants—Improved Purple Skin, Government inspected, $1.25 1,000; 10,000 up, $1.15. Cash with order.

Genuine Nancy Hall Potato Plants—In root protection. 500, 98c; 1,000, $1.88, prepaid. Prompt shipment. Agents wanted. Kentucky Plant Co., Hawesville, Kentucky.

Porto Rico Potato Plants—State Inspected, 500, $1; 1,000, $1.50, postpaid. Express, $1.25 1,000; over 10,000, $1 1,000. Major Crow's Plant Farms, Flowery Branch, Georgia.

Porto Rico Yam Sweet Potato Plants—Now ready. Very large, fine stock. State inspected. $1.65 per 1,000. In 10,000 lots, at $1.50 per 1,000. Rush orders to Success Plant Co., Bartow, Fla.

Porto Rico Potato Plants—Government inspected. $1.50 1,000; 5,000 at $1.35; 10,000 at $1.25; all delivered free. Order early and say when wanted. Cash with order. J. H. Crisp, Fender, Ga.

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Certified Nancy Hall and Porto Rico Potato Slips—Ready for shipment, $2.50 1,000, April; $2 May; delivered. Special price on large quantity. Strong, healthy slips guaranteed, Edgeworth Farms, Corinth, Mississippi.

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PICKIN'S

WILLING

The bargaining for the cow had been going on leisurely for an hour. Finally the prospective purchaser came flatly to the point.

"How much milk does she give?" he asked.

"I don't rightly know," answered the farmer who owned her. "But she's a durn good-natured critter, an' she'll give all she can."

—American Legion Weekly.

MILK MADE A LARGE BABY

Said one man to another, "Have you heard about the baby who thrived so well on elephant's milk?"

"Why, no, whose baby was that?"

"The elephant's baby."

HIS DIET OF MILK

Two men were discussing milk. One remarked that he had been on a milk diet for some time. The other asked, "Did it help you?"

"Oh yes, indeed it did."

"Well, I was on a mill diet for two years." said his companion.

"Did you thrive on it?"

"I certainly did thrive."

"When were you on this diet?"

"The first two years of my life."

SCHOOL BOYS COMPOSITION ON THE GOOSE

The goose is a low, heavy-set bird, composed of meat and feathers. His head sets on one end and he sets on the other. He cannot sing much on account of the dampness in the moisture in which he lives. There ain't no between to his toes and he carries a toy balloon in his stomach to keep from sinking. A goose has two legs and they are set so far back on his running-gear that they came pretty near missing his body. Some geese when they get big are called Ganders. Ganders don't have to set or hatch, but just loaf, eat and go swimming. If I was a goose I'd rather be a gander.

NO DOUBT

W.—Will, the girls are crazy about me.

V.—Yeah, one look and they're hysterical.

THIS WEEK'S CONUNDRUMS

WHEN is a man's pastor really his brother?

2. What covers a multitude of sinners?

3. Why is a dog like a man four feet, ten inches tall?

4. Why is a widow in love like a good gardener?

Answers to Last Week's Conundrums

WHAT is the first thing you do when you go to bed? Make an impression.

2. In what tongue did Balaam's donkey speak? Probably he-bray-ic (Hebraic).

3. How did Jonah feel when the whale swallowed him? Down in the mouth, as if he were going to blubber.

4. When you hear a little boy beating a drum, why are you like a just judge? You hear both sides.

HAMBONE'S MEDITATIONS

—By J. P. Alley—

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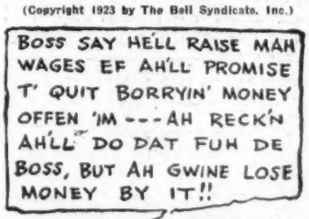
BOSS SAY HE'LL RAISE MAH WAGES EF AH'LL PROMISE T' QUIT BORRYIN' MONEY OFFEN 'IM---AH RECK'N AH'LL DO DAT FUH DE BOSS, BUT AH GWINE LOSE MONEY BY IT!!

ANOTHER REMARK BY HAMBONE

Kunl Bob fixin' t' take me b'ar huntin' wid 'im. But—well, co'se he kin take me whah dey's at, but he' sho' can't make me hunt 'em!